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The Resources Agency
DEPARTMENT OF FISH AND GAME

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY
FOR NORTHERN AND CENTRAL CALIFORNIA,
QUARTERLY REPORT NO. 28,
APRIL TO JUNE, 1986

by

Konstantin A. Karpov

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ABSTRACT

Field intercept Marine Recreational Fisheries Statistics Survey (MRFSS) data for central and northern California, collected in April to June of 1986, is presented in a data report format. Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE). Also, within each area, length-frequency histograms and tables are presented for select species.

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INTRODUCTION

The California Department of Fish and Game under contract to the National Marine Fisheries Service (NMFS) has participated in the Marine Recreational Fisheries Statistics Survey (MRFSS) from mid 1979 to the present. The survey was initiated to gather catch and effort statistics for marine recreational fisheries along the Pacific west coast.

Annual summaries of these statistics are being published elsewhere on a regional basis (Current Fisheries Statistics Numbers 8321, 8323, 8325, 8328 and In press). In these summaries, California's data is divided into two regions: Del Norte to Monterey counties (northern region), and San Luis Obispo to San Diego counties (southern region).

This Quarterly Report No. 28 covers the period of April through June 1986. It supplements the federal annual summary for only the north-central region of California (Del Norte to San Luis Obispo counties). This region is divided into five areas (subregions) corresponding to historical ports.

METHODS

Catch and length data were collected by Department biologists intercepting anglers actively fishing or in the process of leaving a fishing site. Sampling methodology is described in part in Current Fisheries Statistics (8321, 8323, 8325, 8328, and In press).

Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE).

Also, within each area, length-frequency histograms and tables are presented for select species.

Study Areas

Study areas range in size from one county in Area 5 to six counties in Area 3 (Figure 1). Adjacent counties are combined whenever similarity of habitat and species composition warrants. Boat modes are segregated by county only if separate grounds were fished (i.e. Sonoma County Bodega Bay fishery, sub-area 097, from Mendocino County, sub-area 045).

Area 1, including Del Norte and Humboldt counties, extends from the Oregon border to Shelter Cove. Both counties are combined in all mode comparisons. Area 2 contains Mendocino County and that part of Sonoma County which is north of Bodega Bay. Both counties are combined for all modes except the boat modes (private/rental boat and CPFV). The San Francisco Area 3 is segregated into ocean and bay. This area includes anglers from six counties; Marin, Solano, Contra Costa, Alameda, San Francisco, and San Mateo. These counties encircle the bay and extend down to Ano Nuevo. Two sets of tables and figures were generated based on whether anglers specified having fished in the ocean or the bay. Bay anglers were predominantly from San Francisco Bay, but also included a small percentage of Halfmoon Bay anglers. Area 4 includes Santa Cruz County and that part of Monterey County which is north of Ragged Point. Area 5, San Luis Obispo County, extends down to Point Sal.

Fishing Modes

Modes of fishing were organized into six categories: (i) pier or dock, (ii) jetty or breakwater, (iii) bridge or causeway, (iv) beach or bank, (v) private or rental boat, and (vi) commercial passenger fishing vessel (CPFV).

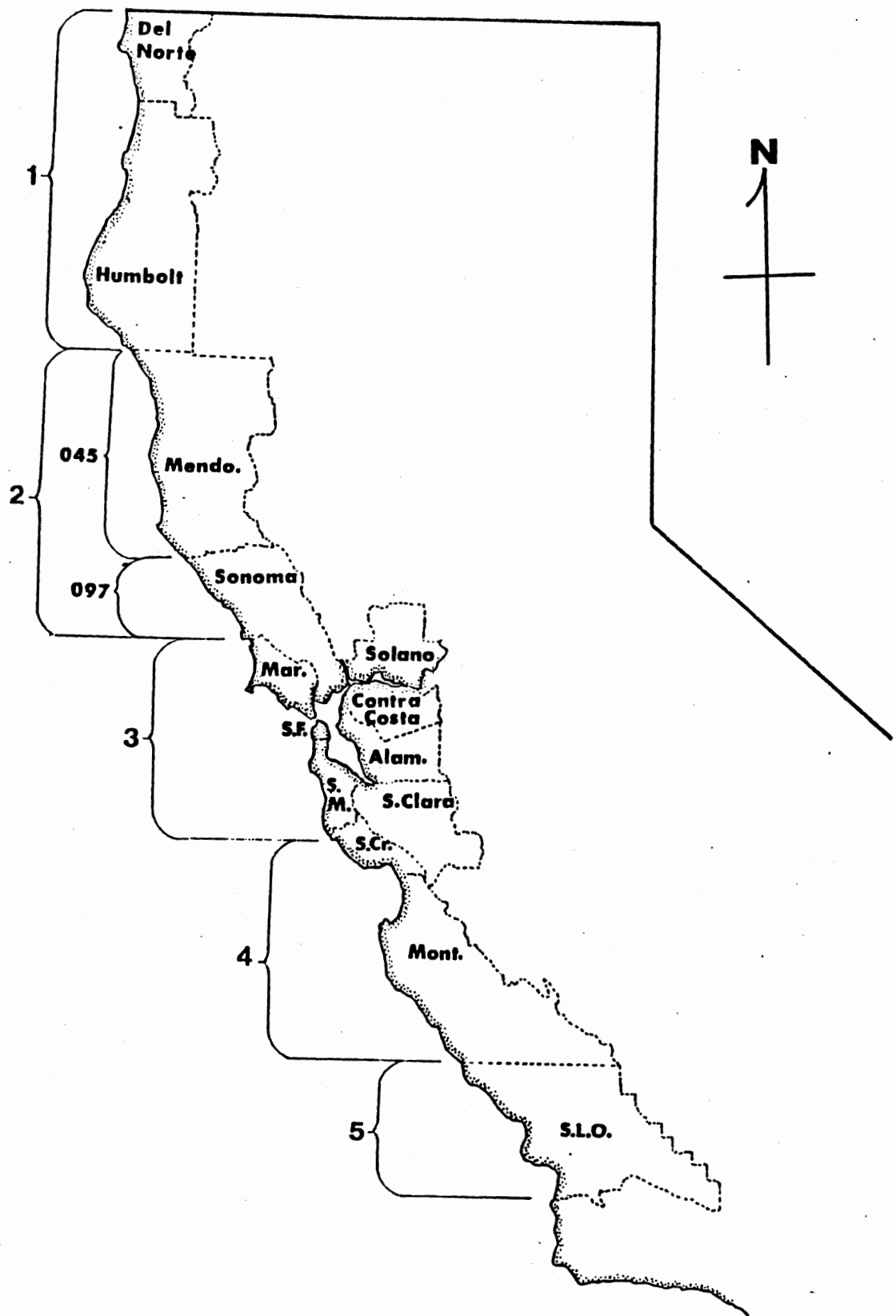


FIGURE 1. Study area counties and sub-areas in northern and central California.

Gear Types

Three types of gear were used; (i) hook-and-line, (ii) spear, or (iii) net. Spears were used only by divers. Dipnet and castnet were the only net gears in active use in northern and central California.

Catch Definition

Catch is defined three different ways: (i) all fish captured, including fish returned dead or alive, those not available at the sampling site (i.e. filleted or given away, etc.), and those available to measure; (ii) landed catch, not including fish returned dead or alive; and, (iii) the measured catch only. Fish caught but unavailable to measure were identified to the nearest taxa using the angler's description.

Computer-Generated Tables and Figures

The Microcomputer Program Series (MPS) was developed to generate the tables and figures used in this report. The programs were designed for flexibility and ease of use on area microcomputers. The programs allow the user to generate tables and figures for any combination of area, mode, gear, or definition of catch. Data generated by these programs include: sampled effort, ranked catch, CPUE, and length-frequency data. Documentation of logic and program listings are available (Karpov, 1984).

Sampled Effort

Sampled effort is the same for all three catch definitions for a particular area, mode, or gear. It includes the number of anglers intercepted, the total hours fishing effort, and total hours still to be fished for incomplete trips.

Ranked Catch

Ranked catch includes rank of species caught by number or weight, and other statistics depending on the catch definition. Fish are

ranked by number caught in two of the catch definitions: all fish caught, and landed catch. The measured catch has fish ranked by weight caught. The measured catch tables include average lengths and standard deviation, and derived average weight.

CPUE

CPUE is calculated using two definitions of both "catch" and "effort". Catch is either number or weight (kilograms) caught. Effort is either angler days or total hours fished. CPUE, computed using weight caught as opposed to number landed, is included only for two of the catch definitions: landed catch and measured catch. Average weights incorporated in the landed catch tables are derived either from the respective measured catch table for the same species or, for the more general species groups by calculating a group average weight. Group average weights of constituent species were calculated from this quarter's data for the same mode, gear, and area. Angler days represent completed fishing days for most areas and modes. Occasional incomplete trips were included for all modes except boat modes.

Length-Frequency Data

Length-frequency histograms and tables were generated for select species. Histograms are included for highly abundant species where at least 10 measured fish occurred in the most frequent size interval. Histograms were summarized in either 5-, 10-, or 20-mm intervals. The criteria for assigning summary intervals was based on the largest recorded size for the species as reported in Miller and Lea (1972). Fish reported from 0 to 12 inches used 5-mm, greater than 12 to 24 inches used 10-mm and greater than 24 inches were assigned 20-mm intervals.

Length-frequency tables (see Appendix A) were generated for all species with at least five measured fish for any given area, mode, and gear. Tables were summarized in 5-mm intervals and include length statistics for possible use in ANOVA computations (Sokal and Rohlf, 1969).

Species Names and Length-Weight Parameters

Total length was recorded for all species except tuna-like fishes with rigid concave caudal fins; for these fork lengths were used. Weights were not actually measured; rather, they were determined, for all major species taken, from precalculated length-weight relationships. The exponential relationship used was $W=aL^b$; where a and b are constants unique to each species (Appendix B).

Scientific and common names used were standardized using the American Fisheries Society list (1980).

Table 1. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	37
Total Hours Effort for Anglers Intercepted	=	88.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpins	1	51	47.2
Surfperches	2	23	21.3
Jacksmelt	3	19	17.6
Cabezon	4	6	5.6
Surfperch, Walleye	5	4	3.7
Surfperch, Redtail	6	4	3.7
Seaperch, White	7	1	0.9
Total		108	100

C. CPUE

Catch per Angler Day	=	2.92	Catch per Angler Hour	=	1.22
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Table 2. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 37
 Total Hours Effort for Anglers Intercepted = 88.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	19	65.5	0.13	2.54
Surfperch, Walleye	2	4	13.8	0.21	0.85
Surfperch, Redtail	3	4	13.8	0.45	1.79
Surfperches	4	1	3.4	0.31**	0.31
Seaperch, White	5	1	3.4	0.14	0.14
Total		29	100		5.63

C. CPUE

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.33
 Kg per Angler Day = 0.15 Kg per Angler Hour = 0.06

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 3. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 37
 Total Hours Effort for Anglers Intercepted = 88.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Redtail	1	1.79	4	19.0	4	0.45	295	25
Jacksmelt	2	1.60	12	57.1	12	0.13	264	22
Surfperch, Walleye	3	0.85	4	19.0	4	0.21	229	18
Seaperch, White	4	0.14	1	4.8	1	0.14	226	0
Total		4.39	21	100	21			

C. CPUE***

Catch per Angler Day = 0.57 Catch per Angler Hour = 0.24
 Kg per Angler Day = 0.12 Kg per Angler Hour = 0.05

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 4. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	205
Total Hours Effort for Anglers Intercepted	=	638.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	59	26.8
Seaperch, Striped	2	44	20.0
Greenling, Rock	3	25	11.4
Greenling, Kelp	4	20	9.1
Greenlings (general)	5	16	7.3
Cabazon	6	13	5.9
Lingcod	7	8	3.6
Rockfishes (general)	8	7	3.2
Perch, Pile	9	6	2.7
Surfperch, Calico	10	5	2.3
Surfperches	11	4	1.8
Rockfish, Grass	12	3	1.4
Surfperch, Walleye	13	3	1.4
Surfperch, Silver	14	3	1.4
Sculpins-	15	2	0.9
Rockfish, Copper	16	1	0.5
Sculpin, Pacific Staghorn	17	1	0.5
Total		220	100

C. CPUE

Catch per Angler Day	=	1.07	Catch per Angler Hour	=	0.34
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Table 5. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 205
 Total Hours Effort for Anglers Intercepted = 638.8
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Black	1	49	26.3	0.50	24.48
Seaperch, Striped	2	44	23.7	0.52	23.00
Greenling, Rock	3	23	12.4	0.35	7.98
Greenling, Kelp	4	20	10.8	0.41	8.30
Cabazon	5	11	5.9	1.11	12.25
Greenlings (general)	6	10	5.4	0.38**	3.80
Lingcod	7	6	3.2	4.63	27.76
Perch, Pile	8	5	2.7	0.69	3.44
Surfperch, Calico	9	4	2.2	0.31	1.24
Rockfishes (general)	10	3	1.6	0.52**	1.56
Rockfish, Grass	11	3	1.6	0.88	2.63
Surfperch, Walleye	12	3	1.6	0.24	0.73
Surfperch, Silver	13	3	1.6	0.23	0.69
Rockfish, Copper	14	1	0.5	0.00**	0.00
Sculpin, Pacific Staghorn	15	1	0.5	0.09	0.09
Total		186	100		117.95

C. CPUE

Catch per Angler Day = 0.91 Catch per Angler Hour = 0.29
 Kg per Angler Day = 0.58 Kg per Angler Hour = 0.18

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 6. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 205
 Total Hours Effort for Anglers Intercepted = 638.8
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	----Mean----		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Striped	1	23.00	44	27.5	42	0.52	316	20
Rockfish, Black	2	21.98	44	27.5	40	0.50	305	72
Lingcod	3	18.51	4	2.5	4	4.63	751	47
Cabazon	4	11.13	10	6.3	10	1.11	367	144
Greenling, Rock	5	7.98	23	14.4	23	0.35	286	37
Greenling, Kelp	6	7.05	17	10.6	17	0.41	295	70
Perch, Pile	7	3.44	5	3.1	5	0.69	340	51
Rockfish, Grass	8	2.63	3	1.9	3	0.88	338	16
Surfperch, Calico	9	0.93	3	1.9	3	0.31	264	20
Surfperch, Walleye	10	0.73	3	1.9	3	0.24	235	27
Surfperch, Silver	11	0.69	3	1.9	3	0.23	241	13
Sculpin, Pacific Staghorn	12	0.09	1	0.6	1	0.09	208	0
Total		98.17	160	100	154			

C. CPUE***

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.25
 Kg per Angler Day = 0.48 Kg per Angler Hour = 0.15

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 7. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	127
Total Hours Effort for Anglers Intercepted	=	337.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	131	46.5
Surfperch, Redtail	2	50	17.7
Sculpins	3	38	13.5
Surfperch, Barred	4	33	11.7
Greenlings (general)	5	7	2.5
Surfperches	6	7	2.5
Surfperch, Calico	7	6	2.1
Greenling, Kelp	8	3	1.1
Greenling, Rock	9	3	1.1
Cabezon	10	3	1.1
Surfperch, Walleye	11	1	0.4
Total		282	100

C. CPUE

Catch per Angler Day	=	2.22	Catch per Angler Hour	=	0.84
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Table 8. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 127
 Total Hours Effort for Anglers Intercepted = 337.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Striped	1	129	58.1	0.51	65.57
Surfperch, Redtail	2	42	18.9	0.47	19.84
Surfperch, Barred	3	33	14.9	0.27	9.06
Surfperch, Calico	4	6	2.7	0.33	1.96
Greenlings (general)	5	3	1.4	0.12**	0.36
Greenling, Kelp	6	3	1.4	0.10	0.30
Cabazon	7	3	1.4	0.32	0.95
Greenling, Rock	8	2	0.9	0.14	0.28
Surfperch, Walleye	9	1	0.5	0.36	0.36
Total		222	100		98.66

C. CPUE

Catch per Angler Day = 1.75 Catch per Angler Hour = 0.66
 Kg per Angler Day = 0.78 Kg per Angler Hour = 0.29

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 9. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 127
 Total Hours Effort for Anglers Intercepted = 337.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Striped	1	61.51	121	58.2	83	0.51	313	26
Surfperch, Redtail	2	19.84	42	20.2	42	0.47	294	46
Surfperch, Barred	3	9.06	33	15.9	27	0.27	243	19
Surfperch, Calico	4	1.31	4	1.9	4	0.33	267	27
Cabazon	5	0.63	2	1.0	2	0.32	255	28
Surfperch, Walleye	6	0.36	1	0.5	1	0.36	265	0
Greenling, Kelp	7	0.30	3	1.4	3	0.10	188	4
Greenling, Rock	8	0.28	2	1.0	2	0.14	211	13
Total		93.27	208	100	164			

C. CPUE***

Catch per Angler Day = 1.64 Catch per Angler Hour = 0.62
 Kg per Angler Day = 0.73 Kg per Angler Hour = 0.28

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 10. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 151
 Total Hours Effort for Anglers Intercepted = 429.6
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	364	67.0
Rockfishes (general)	2	57	10.5
Lingcod	3	17	3.1
Surfperches	4	17	3.1
Surfperch, Walleye	5	13	2.4
Jacksmelt	6	11	2.0
Rockfish, Canary	7	11	2.0
Cabezon	8	10	1.8
Rockfish, China	9	9	1.7
Rockfish, Yellowtail	10	8	1.5
Rockfish, Blue	11	8	1.5
Rockfish, Copper	12	7	1.3
Greenling, Kelp	13	4	0.7
Rockfish, Vermilion	14	2	0.4
Surfperch, Redtail	15	2	0.4
Rockfish, Quillback	16	1	0.2
Bocaccio	17	1	0.2
Rockfish, Yelloweye	18	1	0.2
Total		543	100

C. CPUE

Catch per Angler Day = 3.60 Catch per Angler Hour = 1.26

Table 11. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	151
Total Hours Effort for Anglers Intercepted	=	429.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Black	1	358	72.9	0.88	314.04
Rockfishes (general)	2	43	8.8	0.89**	38.27
Lingcod	3	13	2.6	4.08	53.07
Surfperch, Walleye	4	13	2.6	0.25	3.23
Rockfish, Canary	5	11	2.2	0.85	9.34
Cabazon	6	10	2.0	2.04	20.40
Rockfish, China	7	9	1.8	0.73	6.56
Rockfish, Yellowtail	8	8	1.6	1.47	11.77
Rockfish, Blue	9	8	1.6	0.50	4.02
Rockfish, Copper	10	7	1.4	1.13	7.88
Greenling, Kelp	11	4	0.8	0.66	2.65
Rockfish, Vermilion	12	2	0.4	1.92	3.83
Surfperch, Redtail	13	2	0.4	0.38	0.77
Rockfish, Quillback	14	1	0.2	0.77	0.77
Bocaccio	15	1	0.2	2.60	2.60
Rockfish, Yelloweye	16	1	0.2	0.90	0.90
Total		491	100		480.08

C. CPUE

Catch per Angler Day	=	3.25	Catch per Angler Hour	=	1.14
Kg per Angler Day	=	3.18	Kg per Angler Hour	=	1.12

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 12. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 151
 Total Hours Effort for Anglers Intercepted = 429.6
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Black	1	286.84	327	79.2	212	0.88	382	47
Lingcod	2	53.07	13	3.1	13	4.08	700	128
Cabazon	3	16.32	8	1.9	8	2.04	502	70
Rockfish, Yellowtail	4	11.77	8	1.9	8	1.47	464	40
Rockfish, Canary	5	9.34	11	2.7	11	0.85	379	57
Rockfish, Copper	6	7.88	7	1.7	7	1.13	380	78
Rockfish, China	7	5.10	7	1.7	7	0.73	336	37
Rockfish, Blue	8	4.02	8	1.9	8	0.50	313	51
Rockfish, Vermilion	9	3.83	2	0.5	2	1.92	491	56
Surfperch, Walleye	10	3.23	13	3.1	10	0.25	238	15
Greenling, Kelp	11	2.65	4	1.0	4	0.66	363	12
Bocaccio	12	2.60	1	0.2	1	2.60	624	0
Rockfish, Yelloweye	13	0.90	1	0.2	1	0.90	366	0
Rockfish, Quillback	14	0.77	1	0.2	1	0.77	338	0
Surfperch, Redtail	15	0.77	2	0.5	2	0.38	280	40
Total		409.08	413	100	295			

C. CPUE***

Catch per Angler Day = 2.74 Catch per Angler Hour = 0.96
 Kg per Angler Day = 2.71 Kg per Angler Hour = 0.95

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 2. Length-Frequency Histogram for Striped Seaperch
 Taken by Jetty or Breakwater Anglers Using Hook-and-Line Gear.
 Area 1, Quarter 2, 1986.

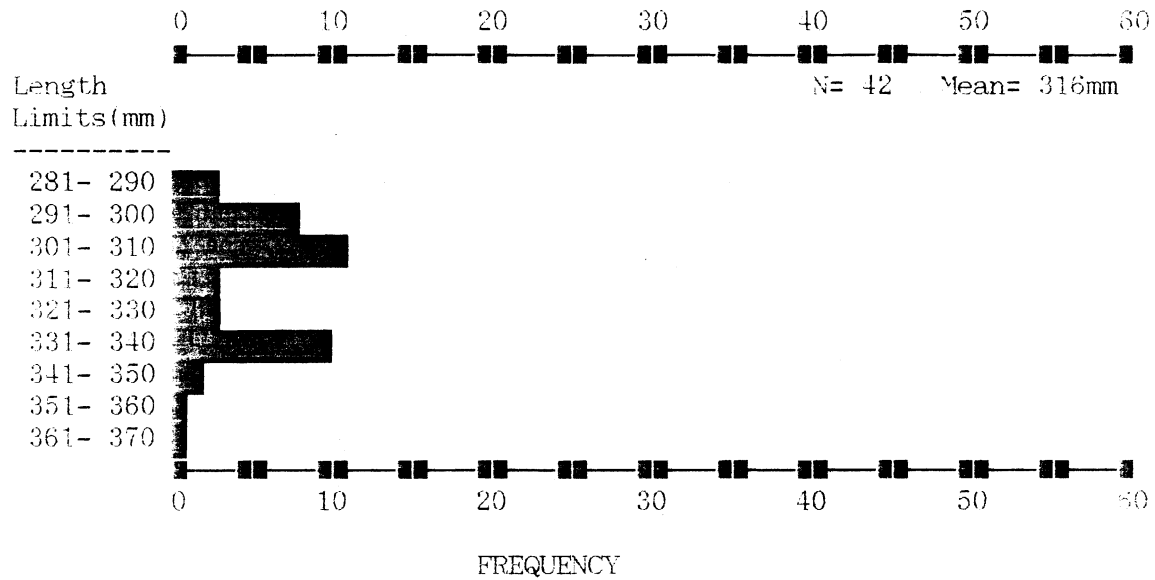


Figure 3. Length-Frequency Histogram for Striped Seaperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 1, Quarter 2, 1986.

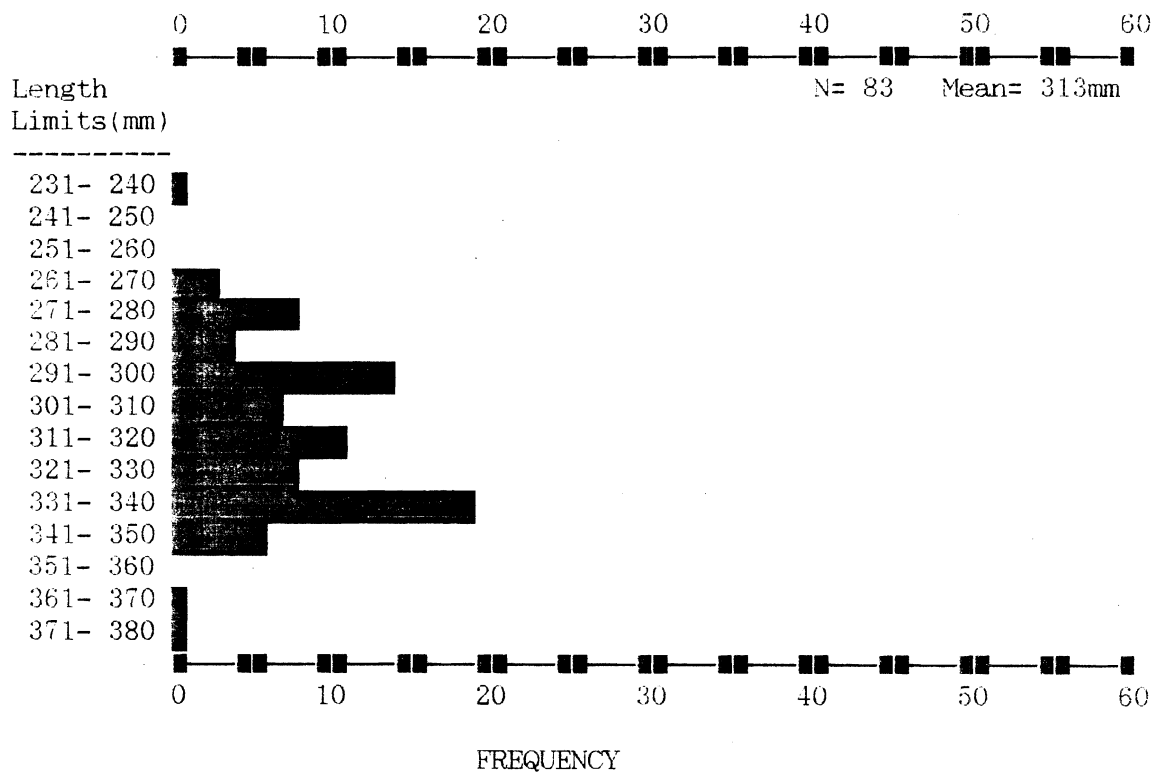


Figure 4. Length-Frequency Histogram for Black Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 1, Quarter 2, 1986.

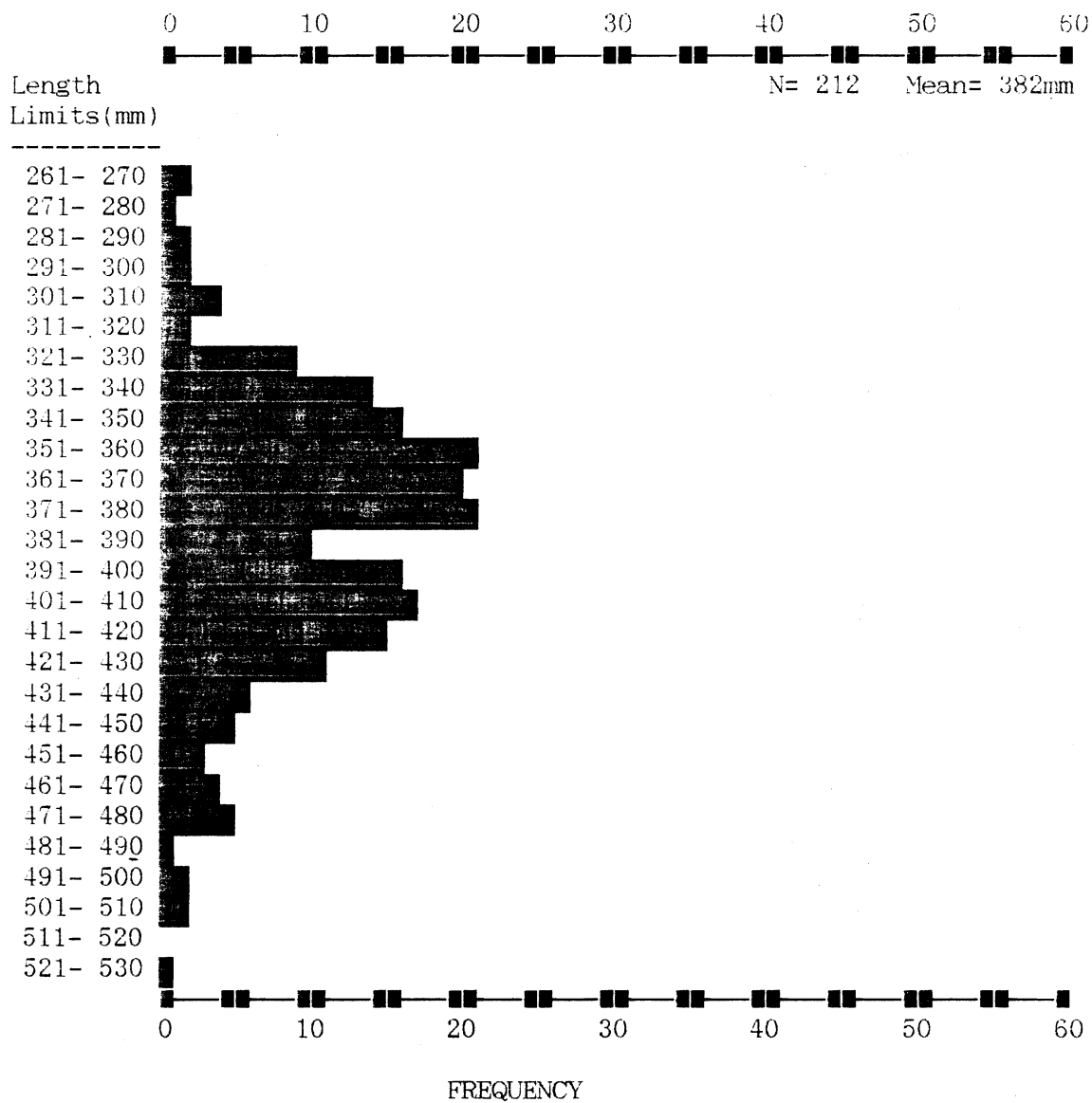


Table 13. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	120
Total Hours Effort for Anglers Intercepted	=	281.5
Total Hours Still to Fish (Incomplete Trips)	=	15.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Herring, Pacific	1	748	77.8
Salmon	2	91	9.5
Salmon, Coho (Silver)	3	50	5.2
Trouts	4	25	2.6
Surfperches	5	16	1.7
Salmon, Pink	6	14	1.5
Perch, Shiner	7	10	1.0
Jacksmelt	8	3	0.3
Unidentified Fishes	9	2	0.2
Sculpin, Pacific Staghorn	10	1	0.1
Seaperch, White	11	1	0.1
Total		961	100

C. CPUE

Catch per Angler Day	=	8.01	Catch per Angler Hour	=	3.41
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Table 14. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	120
Total Hours Effort for Anglers Intercepted	=	281.5
Total Hours Still to Fish (Incomplete Trips)	=	15.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Herring, Pacific	1	741	97.8	0.10	77.27
Salmon, Coho (Silver)	2	7	0.9	0.05	0.33
Perch, Shiner	3	6	0.8	0.03	0.18
Jacksmelt	4	2	0.3	0.00**	0.00
Sculpin, Pacific Staghorn	5	1	0.1	0.05	0.05
Seaperch, White	6	1	0.1	0.14	0.14
Total		758	100		77.98

C. CPUE

Catch per Angler Day	=	6.32	Catch per Angler Hour	=	2.69
Kg per Angler Day	=	0.65	Kg per Angler Hour	=	0.28

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 15. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 120
 Total Hours Effort for Anglers Intercepted = 281.5
 Total Hours Still to Fish (Incomplete Trips) = 15.4

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Herring, Pacific	1	77.27	741	98.0	402	0.10	207	29
Salmon, Coho (Silver)	2	0.33	7	0.9	7	0.05	169	22
Perch, Shiner	3	0.18	6	0.8	6	0.03	131	12
Seaperch, White	4	0.14	1	0.1	1	0.14	226	0
Sculpin, Pacific Staghorn	5	0.05	1	0.1	1	0.05	167	0
Total		77.98	756	100	417			

C. CPUE***

Catch per Angler Day = 6.30 Catch per Angler Hour = 2.69
 Kg per Angler Day = 0.65 Kg per Angler Hour = 0.28

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 16. Sampled Effort, Ranked Catch and CPUE for Area 2
in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using
Hook-and-Line Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	75
Total Hours Effort for Anglers Intercepted	=	219.3
Total Hours Still to Fish (Incomplete Trips)	=	19.8

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	11	57.9
Flounder, Starry	2	2	10.5
Unidentified Fishes	3	1	5.3
Rockfish, Kelp	4	1	5.3
Lingcod	5	1	5.3
Sculpin, Buffalo	6	1	5.3
Sculpin, Pacific Staghorn	7	1	5.3
Prickleback, Monkeyface	8	1	5.3
Total		19	100

C. CPUE

Catch per Angler Day	=	0.25	Catch per Angler Hour	=	0.09
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Table 17. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 75
 Total Hours Effort for Anglers Intercepted = 219.3
 Total Hours Still to Fish (Incomplete Trips) = 19.8

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Seaperch, Striped	1	11	64.7	0.38	4.19
Flounder, Starry	2	2	11.8	4.05	8.10
Rockfish, Kelp	3	1	5.9	0.32	0.32
Lingcod	4	1	5.9	1.93	1.93
Sculpin, Buffalo	5	1	5.9	0.40	0.40
Prickleback, Monkeyface	6	1	5.9	0.00**	0.00
Total		17	100		14.94

C. CPUE

Catch per Angler Day = 0.23 Catch per Angler Hour = 0.08
 Kg per Angler Day = 0.20 Kg per Angler Hour = 0.07

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 18. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 75
 Total Hours Effort for Anglers Intercepted = 219.3
 Total Hours Still to Fish (Incomplete Trips) = 19.8

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Flounder, Starry	1	8.10	2	11.8	2	4.05	648	47
Seaperch, Striped	2	4.19	11	64.7	11	0.38	276	58
Lingcod	3	1.93	1	5.9	1	1.93	562	0
Sculpin, Buffalo	4	0.40	1	5.9	1	0.40	344	0
Rockfish, Kelp	5	0.32	1	5.9	1	0.32	278	0
Prickleback, Monkeyface	6	0.00	1	5.9	1	0.00	542	0
Total		14.94	17	100	17			

C. CPUE***

Catch per Angler Day = 0.23 Catch per Angler Hour = 0.08
 Kg per Angler Day = 0.20 Kg per Angler Hour = 0.07

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 19. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	93
Total Hours Effort for Anglers Intercepted	=	236.1
Total Hours Still to Fish (Incomplete Trips)	=	38.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Cabazon	1	24	23.8
Greenling, Kelp	2	19	18.8
Greenling, Rock	3	10	9.9
Surfperches	4	6	5.9
Seaperch, Striped	5	6	5.9
Surfperch, Calico	6	6	5.9
Rockfishes (general)	7	4	4.0
Rockfish, Blue	8	4	4.0
Unidentified Fishes	9	3	3.0
Greenlings (general)	10	2	2.0
Lingcod	11	2	2.0
Sculpin, Buffalo	12	2	2.0
Surfperch, Walleye	13	2	2.0
Seaperch, White	14	2	2.0
Seaperch, Rubberlip	15	2	2.0
Surfperch, Redtail	16	2	2.0
Surfperch, Barred	17	2	2.0
Rockfish, China	18	1	1.0
Rockfish, Black-and-yellow	19	1	1.0
Rockfish, Grass	20	1	1.0
Total		101	100

C. CPUE

Catch per Angler Day = 1.09 Catch per Angler Hour = 0.43

Table 20. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	93
Total Hours Effort for Anglers Intercepted	=	236.1
Total Hours Still to Fish (Incomplete Trips)	=	38.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Cabazon	1	24	28.2	1.03	24.82
Greenling, Kelp	2	17	20.0	0.48	8.19
Greenling, Rock	3	10	11.8	0.43	4.25
Seaperch, Striped	4	6	7.1	0.40	2.42
Surfperch, Calico	5	6	7.1	0.20	1.20
Rockfish, Blue	6	4	4.7	0.91	3.66
Rockfishes (general)	7	3	3.5	0.97**	2.91
Lingcod	8	2	2.4	0.00**	0.00
Surfperch, Walleye	9	2	2.4	0.36	0.72
Seaperch, White	10	2	2.4	0.20	0.41
Seaperch, Rubberlip	11	2	2.4	0.00**	0.00
Surfperch, Redtail	12	2	2.4	0.36	0.73
Surfperch, Barred	13	2	2.4	0.27	0.55
Rockfish, China	14	1	1.2	0.00**	0.00
Rockfish, Black-and-yellow	15	1	1.2	0.64	0.64
Rockfish, Grass	16	1	1.2	1.51	1.51
Total		85	100		52.00

C. CPUE

Catch per Angler Day	=	0.91	Catch per Angler Hour	=	0.36
Kg per Angler Day	=	0.56	Kg per Angler Hour	=	0.22

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 21. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 93
 Total Hours Effort for Anglers Intercepted = 236.1
 Total Hours Still to Fish (Incomplete Trips) = 38.7

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	----Mean----		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	24.82	24	32.9	24	1.03	387	67
Greenling, Kelp	2	8.19	17	23.3	17	0.48	322	34
Greenling, Rock	3	4.25	10	13.7	10	0.43	294	81
Seaperch, Striped	4	2.02	5	6.8	5	0.40	291	16
Rockfish, Grass	5	1.51	1	1.4	1	1.51	400	0
Surfperch, Calico	6	1.20	6	8.2	6	0.20	230	19
Rockfish, Blue	7	0.91	1	1.4	1	0.91	392	0
Surfperch, Redtail	8	0.73	2	2.7	2	0.36	277	24
Surfperch, Walleye	9	0.72	2	2.7	2	0.36	261	38
Rockfish, Black-and-yellow	10	0.64	1	1.4	1	0.64	319	0
Surfperch, Barred	11	0.55	2	2.7	2	0.27	240	46
Seaperch, White	12	0.41	2	2.7	2	0.20	257	1
Total		45.94	73	100	73			

C. CPUE***

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.31
 Kg per Angler Day = 0.49 Kg per Angler Hour = 0.19

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 22. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	46.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Smelt, Surf	1	195	84.8
Smelt, Night	2	20	8.7
Surfperch, Silver	3	9	3.9
Surfperch, Walleye	4	6	2.6
Total		230	100

C. CPUE

Catch per Angler Day	=	7.93	Catch per Angler Hour	=	4.92
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Table 23. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 29
 Total Hours Effort for Anglers Intercepted = 46.8
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Smelt, Surf	1	195	89.4	0.04	7.64
Smelt, Night	2	20	9.2	0.01	0.20
Surfperch, Silver	3	3	1.4	0.12	0.37
Total		218	100		8.20

C. CPUE

Catch per Angler Day = 7.52 Catch per Angler Hour = 4.66
 Kg per Angler Day = 0.28 Kg per Angler Hour = 0.18

* Weight estimated from length-to-weight regression if available.

Table 24. Sampled Effort, Ranked Catch and CPUE for Area 2
in 1986 for Quarter 2, by Beach or Bank Anglers Using
Shore Net Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	46.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Smelt, Surf	1	5.29	135	85.4	105	0.04	181	11
Surfperch, Silver	2	0.37	3	1.9	3	0.12	198	8
Smelt, Night	3	0.20	20	12.7	20	0.01	121	6
Total		5.85	158	100	128			

C. CPUE***

Catch per Angler Day	=	5.45	Catch per Angler Hour	=	3.38
Kg per Angler Day	=	0.20	Kg per Angler Hour	=	0.13

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 25. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	28
Total Hours Effort for Anglers Intercepted	=	20.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	16	38.1
Cabazon	2	8	19.0
Seaperch, Striped	3	5	11.9
Greenling, Kelp	4	4	9.5
Rockfish, Black	5	3	7.1
Rockfish, Yellowtail	6	1	2.4
Rockfish, China	7	1	2.4
Rockfish, Black-and-yellow	8	1	2.4
Rockfish, Gopher	9	1	2.4
Lingcod	10	1	2.4
Perch, Pile	11	1	2.4
Total		42	100

C. CPUE

Catch per Angler Day	=	1.50	Catch per Angler Hour	=	2.05
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Table 26. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Spear Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	28
Total Hours Effort for Anglers Intercepted	=	20.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	16	38.1	0.66	10.61
Cabazon	2	8	19.0	1.37	10.95
Seaperch, Striped	3	5	11.9	0.57	2.84
Greenling, Kelp	4	4	9.5	0.59	2.35
Rockfish, Black	5	3	7.1	0.63	1.89
Rockfish, Yellowtail	6	1	2.4	0.00**	0.00
Rockfish, China	7	1	2.4	1.80	1.80
Rockfish, Black-and-yellow	8	1	2.4	0.50	0.50
Rockfish, Gopher	9	1	2.4	0.49	0.49
Lingcod	10	1	2.4	3.05	3.05
Perch, Pile	11	1	2.4	0.82	0.82
Total		42	100		35.29

C. CPUE

Catch per Angler Day	=	1.50	Catch per Angler Hour	=	2.05
Kg per Angler Day	=	1.26	Kg per Angler Hour	=	1.72

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 27. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1986 for Quarter 2, by Beach or Bank Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 28
 Total Hours Effort for Anglers Intercepted = 20.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabazon	1	10.95	8	25.8	8	1.37	430	76
Rockfish, Blue	2	5.30	8	25.8	8	0.66	351	25
Lingcod	3	3.05	1	3.2	1	3.05	655	0
Seaperch, Striped	4	2.84	5	16.1	5	0.57	324	30
Greenling, Kelp	5	2.35	4	12.9	4	0.59	343	54
Rockfish, China	6	1.80	1	3.2	1	1.80	450	0
Perch, Pile	7	0.82	1	3.2	1	0.82	367	0
Rockfish, Black	8	0.63	1	3.2	1	0.63	347	0
Rockfish, Black-and-yellow	9	0.50	1	3.2	1	0.50	296	0
Rockfish, Gopher	10	0.49	1	3.2	1	0.49	312	0
Total		28.72	31	100	31			

C. CPUE***

Catch per Angler Day = 1.11 Catch per Angler Hour = 1.51
 Kg per Angler Day = 1.03 Kg per Angler Hour = 1.40

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 5. Length-Frequency Histogram for Pacific Herring
Taken by Pier or Dock Anglers Using Hook-and-Line Gear.
Area 2, Quarter 2, 1986.

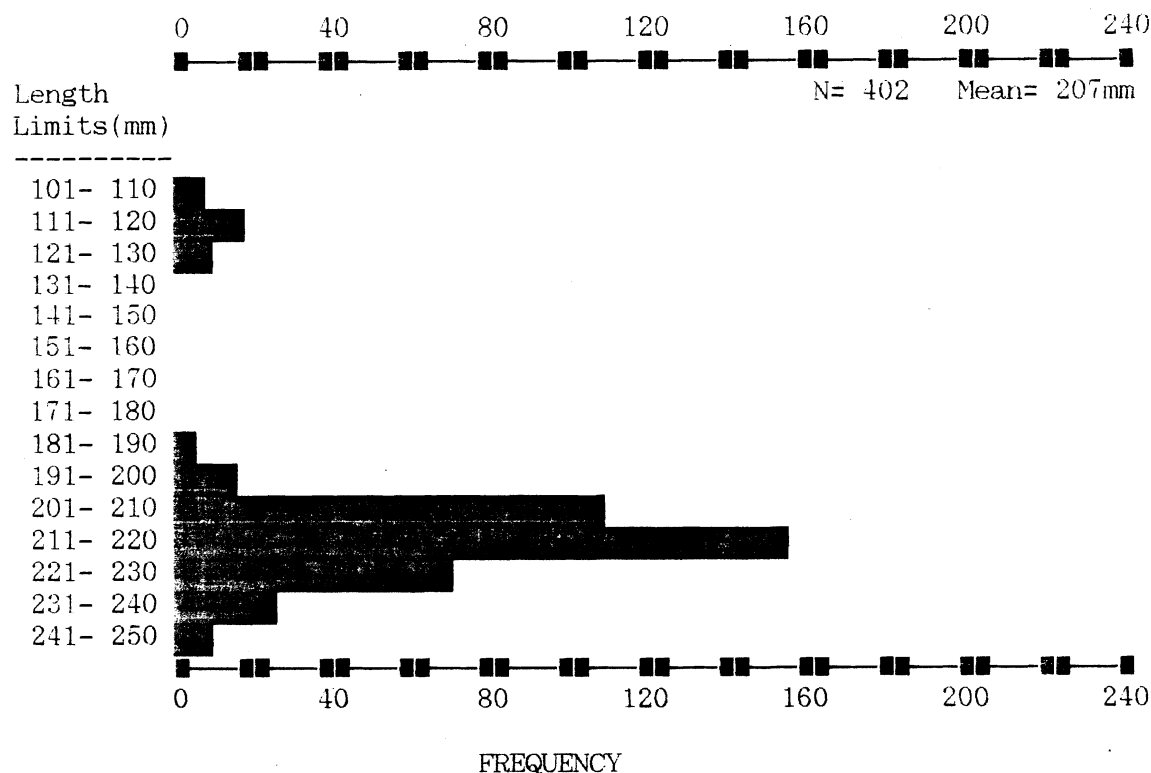


Figure 6. Length-Frequency Histogram for Surf Smelt
Taken by Beach and Bank Anglers Using Shore Net Gear.
Area 2, Quarter 2, 1986.

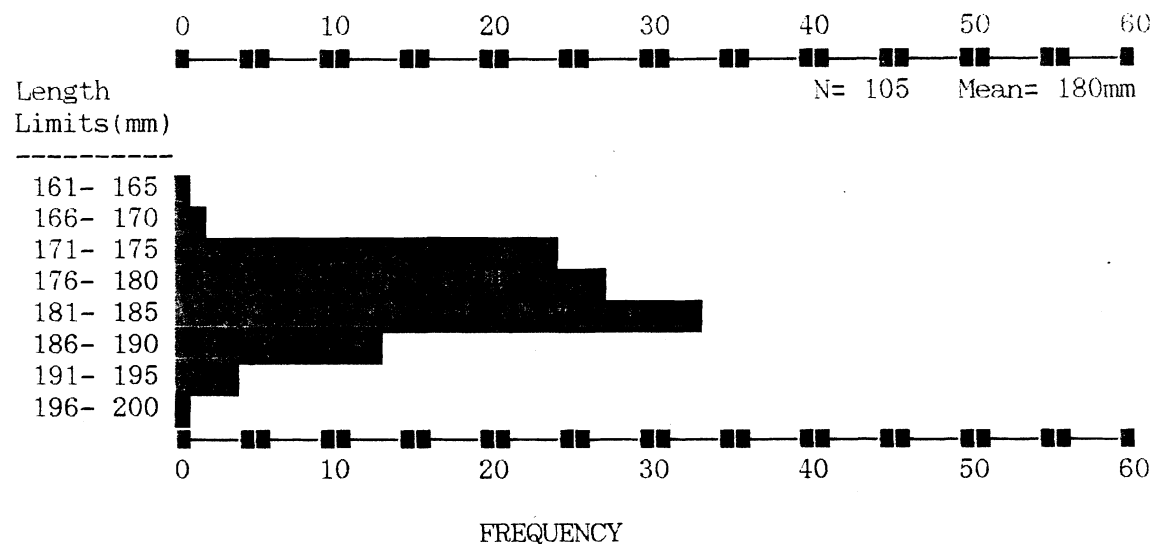


Table 28. Sampled Effort, Ranked Catch and CPUE for Area 045
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	132
Total Hours Effort for Anglers Intercepted	=	467.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Canary	1	69	27.9
Lingcod	2	34	13.8
Rockfish, China	3	20	8.1
Rockfish, Blue	4	18	7.3
Rockfish, Black	5	17	6.9
Rockfish, Copper	6	15	6.1
Rockfish, Yellowtail	7	15	6.1
Greenling, Kelp	8	12	4.9
Sanddab, Pacific	9	9	3.6
Rockfish, Rosy	10	7	2.8
Greenling, Rock	11	7	2.8
Rockfish, Yelloweye	12	5	2.0
Cabezon	13	4	1.6
Salmon, Chinook (King)	14	3	1.2
Greenlings (general)	15	2	0.8
Seaperch, Rainbow	16	2	0.8
Wolf-eel	17	2	0.8
Sole, Rock	18	2	0.8
Rockfish, Quillback	19	1	0.4
Rockfish, Vermilion	20	1	0.4
Rockfish, Grass	21	1	0.4
Seaperch, Striped	22	1	0.4
Total		247	100

C. CPUE

Catch per Angler Day	=	1.87	Catch per Angler Hour	=	0.53
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Table 29. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 132
 Total Hours Effort for Anglers Intercepted = 467.1
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Canary	1	69	29.4	0.48	33.20
Lingcod	2	29	12.3	4.00	116.12
Rockfish, China	3	20	8.5	0.65	13.07
Rockfish, Blue	4	18	7.7	0.57	10.22
Rockfish, Copper	5	15	6.4	1.61	24.10
Rockfish, Yellowtail	6	15	6.4	0.30	4.52
Rockfish, Black	7	13	5.5	1.09	14.16
Greenling, Kelp	8	12	5.1	0.55	6.57
Sanddab, Pacific	9	9	3.8	0.13	1.20
Rockfish, Rosy	10	7	3.0	0.38	2.63
Greenling, Rock	11	7	3.0	0.57	4.01
Rockfish, Yelloweye	12	5	2.1	1.30	6.50
Cabezon	13	4	1.7	1.16	4.63
Salmon, Chinook (King)	14	3	1.3	3.56	10.67
Seaperch, Rainbow	15	2	0.9	0.20	0.39
Sole, Rock	16	2	0.9	1.22	2.45
Rockfish, Quillback	17	1	0.4	2.21	2.21
Rockfish, Vermilion	18	1	0.4	1.35	1.35
Rockfish, Grass	19	1	0.4	0.71	0.71
Seaperch, Striped	20	1	0.4	0.14	0.14
Wolf-eel	21	1	0.4	14.09	14.09
Total		235	100		272.93

C. CPUE

Catch per Angler Day = 1.78 Catch per Angler Hour = 0.50
 Kg per Angler Day = 2.07 Kg per Angler Hour = 0.58

* Weight estimated from length-to-weight regression if available.

Table 30. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 132
 Total Hours Effort for Anglers Intercepted = 467.1
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	116.12	29	12.3	29	4.00	703	101
Rockfish, Canary	2	33.20	69	29.4	62	0.48	316	41
Rockfish, Copper	3	24.10	15	6.4	15	1.61	434	70
Rockfish, Black	4	14.16	13	5.5	13	1.09	412	51
Wolf-eel	5	14.09	1	0.4	1	14.09	1139	0
Rockfish, China	6	13.07	20	8.5	20	0.65	324	35
Salmon, Chinook (King)	7	10.67	3	1.3	3	3.56	721	36
Rockfish, Blue	8	10.22	18	7.7	18	0.57	324	60
Greenling, Kelp	9	6.57	12	5.1	12	0.55	336	40
Rockfish, Yelloweye	10	6.50	5	2.1	5	1.30	387	112
Cabezon	11	4.63	4	1.7	4	1.16	411	43
Rockfish, Yellowtail	12	4.52	15	6.4	15	0.30	265	58
Greenling, Rock	13	4.01	7	3.0	7	0.57	344	24
Rockfish, Rosy	14	2.63	7	3.0	7	0.38	283	21
Sole, Rock	15	2.45	2	0.9	2	1.22	446	38
Rockfish, Quillback	16	2.21	1	0.4	1	2.21	484	0
Rockfish, Vermilion	17	1.35	1	0.4	1	1.35	438	0
Sanddab, Pacific	18	1.20	9	3.8	9	0.13	225	37
Rockfish, Grass	19	0.71	1	0.4	1	0.71	317	0
Seaperch, Rainbow	20	0.39	2	0.9	2	0.20	231	2
Seaperch, Striped	21	0.14	1	0.4	1	0.14	205	0
Total		272.93	235	100	228			

C. CPUE***

Catch per Angler Day = 1.78 Catch per Angler Hour = 0.50
 Kg per Angler Day = 2.07 Kg per Angler Hour = 0.58

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 31. Sampled Effort, Ranked Catch and CPUE for Area 045
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	6
Total Hours Effort for Anglers Intercepted	=	6.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	4	40.0
Rockfish, Blue	2	4	40.0
Cabezon	3	2	20.0
Total		10	100

C. CPUE

Catch per Angler Day = 1.67 Catch per Angler Hour = 1.54

Table 32. Sampled Effort, Ranked Catch and CPUE for Area 045
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents Number Landed
and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	6
Total Hours Effort for Anglers Intercepted	=	6.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Rockfish, Black	1	4	40.0	1.20	4.80
Rockfish, Blue	2	4	40.0	0.83	3.32
Cabezon	3	2	20.0	1.66	3.31
Total		10	100		11.44

C. CPUE

Catch per Angler Day	=	1.67	Catch per Angler Hour	=	1.54
Kg per Angler Day	=	1.91	Kg per Angler Hour	=	1.76

* Weight estimated from length-to-weight regression if available.

Table 33. Sampled Effort, Ranked Catch and CPUE for Area 045
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 6
Total Hours Effort for Anglers Intercepted = 6.5
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Black	1	4.80	4	40.0	4	1.20	431	25
Rockfish, Blue	2	3.32	4	40.0	4	0.83	379	12
Cabezon	3	3.31	2	20.0	2	1.66	468	65
Total		11.44	10	100	10			

C. CPUE***

Catch per Angler Day = 1.67 Catch per Angler Hour = 1.54
Kg per Angler Day = 1.91 Kg per Angler Hour = 1.76

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 34. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	116.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (general)	1	22	40.7
Rockfish, Black	2	15	27.8
Rockfish, Blue	3	6	11.1
Salmon, Chinook (King)	4	5	9.3
Rockfish, Yellowtail	5	2	3.7
Rockfish, Grass	6	2	3.7
Rockfish, Canary	7	1	1.9
Rockfish, Yelloweye	8	1	1.9
Total		54	100

C. CPUE

Catch per Angler Day	=	1.86	Catch per Angler Hour	=	0.47
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Table 35. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	116.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfishes (general)	1	22	40.7	1.13**	24.86
Rockfish, Black	2	15	27.8	1.15	17.28
Rockfish, Blue	3	6	11.1	0.91	5.43
Salmon, Chinook (King)	4	5	9.3	4.62	23.09
Rockfish, Yellowtail	5	2	3.7	1.09	2.18
Rockfish, Grass	6	2	3.7	2.08	4.15
Rockfish, Canary	7	1	1.9	0.32	0.32
Rockfish, Yelloweye	8	1	1.9	1.20	1.20
Total		54	100		78.51

C. CPUE

Catch per Angler Day	=	1.86	Catch per Angler Hour	=	0.47
Kg per Angler Day	=	2.71	Kg per Angler Hour	=	0.68

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 36. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 29
 Total Hours Effort for Anglers Intercepted = 116.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Salmon, Chinook (King)	1	23.09	5	15.6	5	4.62	781	84
Rockfish, Black	2	17.28	15	46.9	15	1.15	423	36
Rockfish, Blue	3	5.43	6	18.8	6	0.91	389	30
Rockfish, Grass	4	4.15	2	6.3	2	2.08	430	96
Rockfish, Yellowtail	5	2.18	2	6.3	2	1.09	420	50
Rockfish, Yelloweye	6	1.20	1	3.1	1	1.20	403	0
Rockfish, Canary	7	0.32	1	3.1	1	0.32	280	0
Total		53.65	32	100	32			

C. CPUE***

Catch per Angler Day = 1.10 Catch per Angler Hour = 0.28
 Kg per Angler Day = 1.85 Kg per Angler Hour = 0.46

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 7. Length-Frequency Histogram for Canary Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear,
 Area 045, Quarter 2, 1986.

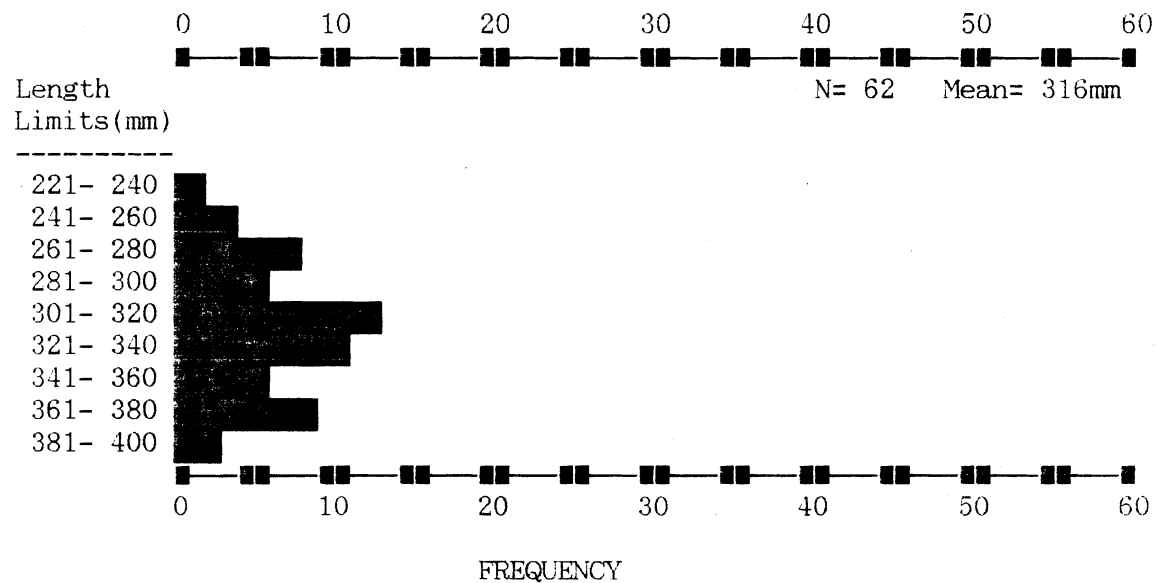


Table 37. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	9
Total Hours Effort for Anglers Intercepted	=	43.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Canary	1	7	33.3
Rockfish, Yellowtail	2	5	23.8
Rockfish, Brown	3	4	19.0
Rockfish, Widow	4	3	14.3
Rockfish, Vermilion	5	1	4.8
Rockfish, Gopher	6	1	4.8
Total		21	100

C. CPUE

Catch per Angler Day	=	2.33	Catch per Angler Hour	=	0.48
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Table 38. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	9
Total Hours Effort for Anglers Intercepted	=	43.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Canary	1	7	33.3	0.71	5.00
Rockfish, Yellowtail	2	5	23.8	0.51	2.57
Rockfish, Brown	3	4	19.0	0.00**	0.00
Rockfish, Widow	4	3	14.3	0.00**	0.00
Rockfish, Vermilion	5	1	4.8	0.49	0.49
Rockfish, Gopher	6	1	4.8	0.48	0.48
Total		21	100		8.53

C. CPUE

Catch per Angler Day	=	2.33	Catch per Angler Hour	=	0.48
Kg per Angler Day	=	0.95	Kg per Angler Hour	=	0.20

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 39. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 9
 Total Hours Effort for Anglers Intercepted = 43.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Canary	1	2.86	4	57.1	4	0.71	364	29
Rockfish, Yellowtail	2	0.51	1	14.3	1	0.51	330	0
Rockfish, Vermilion	3	0.49	1	14.3	1	0.49	310	0
Rockfish, Gopher	4	0.48	1	14.3	1	0.48	310	0
Total		4.34	7	100	7			

C. CPUE***

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.16
 Kg per Angler Day = 0.48 Kg per Angler Hour = 0.10

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 40. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	41
Total Hours Effort for Anglers Intercepted	=	146.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	185	49.3
Rockfish, Canary	2	50	13.3
Rockfish, Greenspotted	3	44	11.7
Rockfish, Rosy	4	17	4.5
Chilipepper	5	13	3.5
Rockfish, Starry	6	13	3.5
Rockfish, Yelloweye	7	9	2.4
Rockfish, Speckled	8	9	2.4
Rockfish, Greenstriped	9	8	2.1
Rockfishes (general)	10	7	1.9
Rockfish, Olive	11	7	1.9
Rockfish, Greenblotched	12	4	1.1
Rockfish, Widow	13	3	0.8
Bocaccio	14	3	0.8
Lingcod	15	2	0.5
Codfishes	16	1	0.3
Total		375	100

C. CPUE

Catch per Angler Day	=	9.15	Catch per Angler Hour	=	2.56
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Table 41. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 41
 Total Hours Effort for Anglers Intercepted = 146.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Rockfish, Yellowtail	1	185	51.1	1.15	211.90
Rockfish, Canary	2	50	13.8	1.68	84.04
Rockfish, Greenspotted	3	44	12.2	0.95	41.85
Chilipepper	4	13	3.6	1.35	17.59
Rockfish, Starry	5	13	3.6	0.89	11.57
Rockfish, Yelloweye	6	9	2.5	3.33	29.96
Rockfish, Speckled	7	9	2.5	0.82	7.36
Rockfish, Greenstriped	8	8	2.2	0.33	2.68
Rockfish, Rosy	9	8	2.2	0.27	2.18
Rockfish, Olive	10	7	1.9	1.06	7.42
Rockfish, Greenblotched	11	4	1.1	1.19	4.77
Rockfishes (general)	12	3	0.8	1.22**	3.66
Rockfish, Widow	13	3	0.8	0.69	2.06
Bocaccio	14	3	0.8	3.01	9.03
Lingcod	15	2	0.6	5.35	10.70
Codfishes	16	1	0.3	0.00**	0.00
Total		362	100		446.76

C. CPUE

Catch per Angler Day = 8.83 Catch per Angler Hour = 2.47
 Kg per Angler Day = 10.90 Kg per Angler Hour = 3.05

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 42. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 41
 Total Hours Effort for Anglers Intercepted = 146.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	211.90	185	51.5	162	1.15	425	44
Rockfish, Canary	2	84.04	50	13.9	50	1.68	473	73
Rockfish, Greenspotted	3	41.85	44	12.3	44	0.95	388	39
Rockfish, Yelloweye	4	29.96	9	2.5	9	3.33	534	130
Chilipepper	5	17.59	13	3.6	13	1.35	471	33
Rockfish, Starry	6	11.57	13	3.6	13	0.89	371	37
Lingcod	7	10.70	2	0.6	2	5.35	775	158
Bocaccio	8	9.03	3	0.8	3	3.01	621	180
Rockfish, Olive	9	7.42	7	1.9	7	1.06	421	70
Rockfish, Speckled	10	7.36	9	2.5	9	0.82	379	47
Rockfish, Greenblotched	11	4.77	4	1.1	4	1.19	417	60
Rockfish, Greenstriped	12	2.68	8	2.2	8	0.33	307	20
Rockfish, Rosy	13	2.18	8	2.2	8	0.27	253	31
Rockfish, Widow	14	2.06	3	0.8	3	0.69	374	7
Codfishes	15	0.00	1	0.3	1	0.00	645	0
Total		443.10	359	100	336			

C. CPUE***

Catch per Angler Day = 8.76 Catch per Angler Hour = 2.45
 Kg per Angler Day = 10.81 Kg per Angler Hour = 3.03

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 8. Length-Frequency Histogram for Yellowtail Rockfish
Taken by All CPFV Anglers Using Hook-and-Line Gear.
Area 097, Quarter 2, 1986.

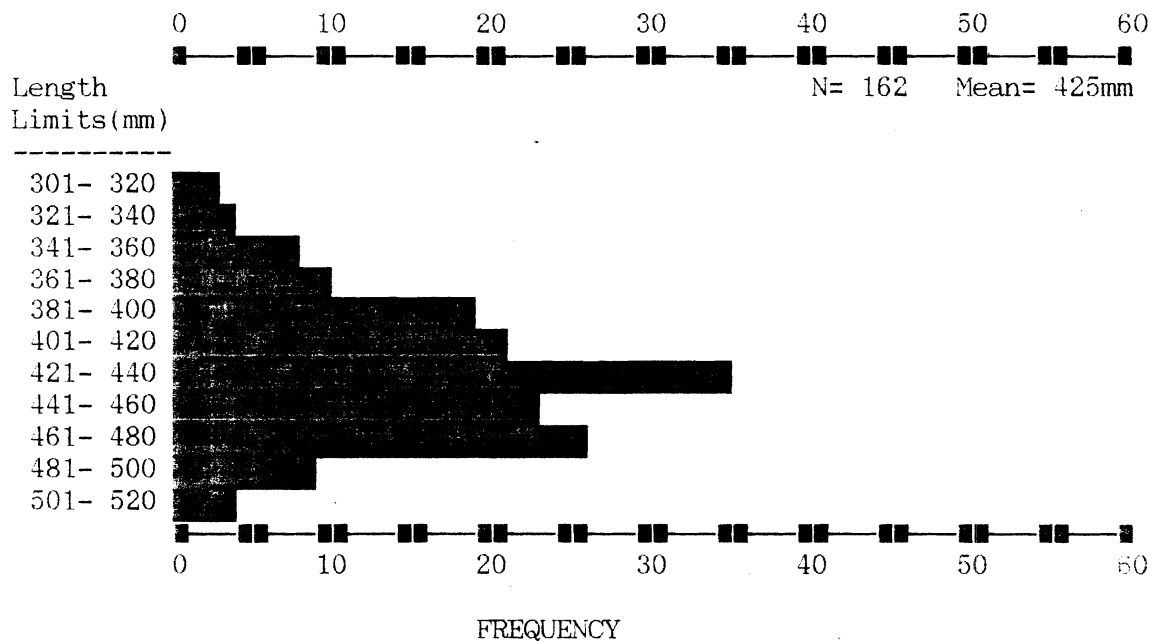


Table 43. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	25
Total Hours Effort for Anglers Intercepted	=	85.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	4	66.7
Croaker, White	2	2	33.3
Total		6	100

C. CPUE

Catch per Angler Day	=	0.24	Catch per Angler Hour	=	0.07
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Table 44. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	25
Total Hours Effort for Anglers Intercepted	=	85.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught

Total		0	0		0.00

C. CPUE

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

* Weight estimated from length-to-weight regression if available.

Table 45. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	25
Total Hours Effort for Anglers Intercepted	=	85.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Total		0.00	0	0	0			

C. CPUE***

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 46. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	90
Total Hours Effort for Anglers Intercepted	=	242.1
Total Hours Still to Fish (Incomplete Trips)	=	2.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Unidentified Fishes	1	8	17.0
Seaperch, Striped	2	7	14.9
Surfperch, Barred	3	5	10.6
Greenling, Kelp	4	3	6.4
Cabazon	5	3	6.4
Surfperch, Walleye	6	3	6.4
Surfperch, Silver	7	3	6.4
Surfperch, Redtail	8	3	6.4
Surfperch, Calico	9	3	6.4
Prickleback, Monkeyface	10	3	6.4
Skates	11	1	2.1
Rockfish, Kelp	12	1	2.1
Lingcod	13	1	2.1
Surfperches	14	1	2.1
Perch, Pile	15	1	2.1
Seaperch, Rainbow	16	1	2.1
Total		47	100

C. CPUE

Catch per Angler Day	=	0.52	Catch per Angler Hour	=	0.19
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Table 47. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 90
 Total Hours Effort for Anglers Intercepted = 242.1
 Total Hours Still to Fish (Incomplete Trips) = 2.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Striped	1	7	21.2	0.33	2.28
Surfperch, Barred	2	5	15.2	0.77	3.85
Greenling, Kelp	3	3	9.1	0.34	1.03
Cabazon	4	3	9.1	0.36	1.08
Surfperch, Walleye	5	3	9.1	0.28	0.83
Surfperch, Silver	6	3	9.1	0.21	0.64
Surfperch, Calico	7	3	9.1	0.17	0.51
Surfperch, Redtail	8	2	6.1	0.53	1.07
Rockfish, Kelp	9	1	3.0	0.64	0.64
Perch, Pile	10	1	3.0	0.77	0.77
Seaperch, Rainbow	11	1	3.0	0.27	0.27
Prickleback, Monkeyface	12	1	3.0	0.00**	0.00
Total		33	100		12.95

C. CPUE

Catch per Angler Day = 0.37 Catch per Angler Hour = 0.14
 Kg per Angler Day = 0.14 Kg per Angler Hour = 0.05

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 48. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 90
 Total Hours Effort for Anglers Intercepted = 242.1
 Total Hours Still to Fish (Incomplete Trips) = 2.1

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	3.85	5	15.2	5	0.77	337	37
Seaperch, Striped	2	2.28	7	21.2	7	0.33	270	21
Cabazon	3	1.08	3	9.1	3	0.36	266	39
Surfperch, Redtail	4	1.07	2	6.1	2	0.53	314	2
Greenling, Kelp	5	1.03	3	9.1	3	0.34	280	69
Surfperch, Walleye	6	0.83	3	9.1	3	0.28	246	16
Perch, Pile	7	0.77	1	3.0	1	0.77	360	0
Rockfish, Kelp	8	0.64	1	3.0	1	0.64	352	0
Surfperch, Silver	9	0.64	3	9.1	3	0.21	231	39
Surfperch, Calico	10	0.51	3	9.1	3	0.17	216	31
Seaperch, Rainbow	11	0.27	1	3.0	1	0.27	256	0
Prickleback, Monkeyface	12	0.00	1	3.0	1	0.00	691	0
Total		12.95	33	100	33			

C. CPUE***

Catch per Angler Day = 0.37 Catch per Angler Hour = 0.14
 Kg per Angler Day = 0.14 Kg per Angler Hour = 0.05

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 49. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	17
Total Hours Effort for Anglers Intercepted	=	53.3
Total Hours Still to Fish (Incomplete Trips)	=	1.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Brown	1	6	46.2
Rockfish, Black	2	3	23.1
Rockfish, Canary	3	2	15.4
Sculpin, Pacific Staghorn	4	1	7.7
Surfperches	5	1	7.7
Total		13	100

C. CPUE

Catch per Angler Day = 0.76 Catch per Angler Hour = 0.24

Table 50. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	17
Total Hours Effort for Anglers Intercepted	=	53.3
Total Hours Still to Fish (Incomplete Trips)	=	1.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Rockfish, Brown	1	3	37.5	0.78	2.33
Rockfish, Black	2	3	37.5	0.61	1.84
Rockfish, Canary	3	2	25.0	0.74	1.48
Total		8	100		5.65

C. CPUE

Catch per Angler Day	=	0.47	Catch per Angler Hour	=	0.15
Kg per Angler Day	=	0.33	Kg per Angler Hour	=	0.11

* Weight estimated from length-to-weight regression if available.

Table 51. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 17
 Total Hours Effort for Anglers Intercepted = 53.3
 Total Hours Still to Fish (Incomplete Trips) = 1.1

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Brown	1	2.33	3	37.5	3	0.78	350	41
Rockfish, Black	2	1.84	3	37.5	3	0.61	344	14
Rockfish, Canary	3	1.48	2	25.0	2	0.74	369	27
Total		5.65	8	100	8			

C. CPUE***

Catch per Angler Day = 0.47 Catch per Angler Hour = 0.15
 Kg per Angler Day = 0.33 Kg per Angler Hour = 0.11

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 52. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	149
Total Hours Effort for Anglers Intercepted	=	628.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Brown	1	187	18.7
Rockfish, Yellowtail	2	167	16.7
Rockfish, Canary	3	122	12.2
Rockfish, Rosy	4	108	10.8
Rockfish, Greenspotted	5	92	9.2
Rockfish, Copper	6	47	4.7
Lingcod	7	37	3.7
Rockfish, Yelloweye	8	29	2.9
Rockfishes (general)	9	27	2.7
Rockfish, Starry	10	23	2.3
Bocaccio	11	22	2.2
Chilipepper	12	21	2.1
Rockfish, Black	13	20	2.0
Rockfish, Blue	14	19	1.9
Rockfish, China	15	17	1.7
Rockfish, Olive	16	15	1.5
Unidentified Fishes	17	10	1.0
Rockfish, Vermilion	18	10	1.0
Rockfish, Gopher	19	10	1.0
Cabazon	20	3	0.3
Rockfish, Widow	21	2	0.2
Rockfish, Speckled	22	2	0.2
Greenling, Kelp	23	2	0.2
Sanddab, Pacific	24	2	0.2
Sole, Petrale	25	2	0.2
Rockfish, Kelp	26	1	0.1

(Table 52. - continued)

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Greenblotched	27	1	0.1
Mackerel, Pacific (Chub)	28	1	0.1
Halibut, California	29	1	0.1
Total		1000	100

C. CPUE

Catch per Angler Day = 6.71 Catch per Angler Hour = 1.59

Table 53. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 149
 Total Hours Effort for Anglers Intercepted = 628.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Brown	1	187	19.7	0.71	132.17
Rockfish, Yellowtail	2	166	17.5	0.93	154.50
Rockfish, Canary	3	122	12.8	0.67	82.18
Rockfish, Rosy	4	105	11.0	0.23	24.58
Rockfish, Greenspotted	5	92	9.7	0.79	73.07
Rockfish, Copper	6	45	4.7	1.28	57.38
Rockfish, Yelloweye	7	29	3.0	2.32	67.30
Lingcod	8	27	2.8	4.66	125.94
Rockfish, Starry	9	23	2.4	0.81	18.71
Bocaccio	10	22	2.3	2.61	57.35
Chilipepper	11	21	2.2	0.98	20.62
Rockfish, Black	12	20	2.1	0.62	12.34
Rockfish, Blue	13	19	2.0	0.55	10.46
Rockfish, China	14	17	1.8	0.39	6.58
Rockfish, Olive	15	15	1.6	0.56	8.37
Rockfish, Vermilion	16	10	1.1	1.60	15.96
Rockfish, Gopher	17	10	1.1	0.35	3.52
Rockfishes (general)	18	4	0.4	8.72	34.86
Cabazon	19	3	0.3	1.50	4.51
Rockfish, Widow	20	2	0.2	0.48	0.96
Rockfish, Speckled	21	2	0.2	0.75	1.50
Greenling, Kelp	22	2	0.2	0.60	1.21
Sanddab, Pacific	23	2	0.2	0.10	0.20
Sole, Petrale	24	2	0.2	0.51	1.01
Rockfish, Kelp	25	1	0.1	1.44	1.44
Rockfish, Greenblotched	26	1	0.1	0.55	0.55
Mackerel, Pacific (Chub)	27	1	0.1	0.49	0.49

(Table 53. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Halibut, California	28	1	0.1	10.47	10.47
Total		951	100		928.20

C. CPUE

Catch per Angler Day = 6.38 Catch per Angler Hour = 1.51
 Kg per Angler Day = 6.23 Kg per Angler Hour = 1.48

* Weight estimated from length-to-weight regression if available.

Table 54. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean)
in 1986 for Quarter 2, by All CPFV Anglers Using
Hook-and-Line Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 149
Total Hours Effort for Anglers Intercepted = 628.5
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	154.50	166	17.5	163	0.93	395	52
Rockfish, Brown	2	131.46	186	19.6	167	0.71	334	52
Lingcod	3	125.94	27	2.9	27	4.66	734	129
Rockfish, Canary	4	82.18	122	12.9	121	0.67	337	84
Rockfish, Greenspotted	5	73.07	92	9.7	91	0.79	361	54
Rockfish, Yelloweye	6	67.30	29	3.1	31	2.32	488	77
Rockfish, Copper	7	57.38	45	4.8	45	1.28	398	75
Bocaccio	8	57.35	22	2.3	24	2.61	606	110
Rockfish, Rosy	9	24.58	105	11.1	105	0.23	239	32
Chilipepper	10	20.62	21	2.2	21	0.98	423	50
Rockfish, Starry	11	18.71	23	2.4	26	0.81	362	32
Rockfish, Vermilion	12	15.96	10	1.1	10	1.60	446	95
Rockfish, Black	13	12.34	20	2.1	20	0.62	334	59
Halibut, California	14	10.47	1	0.1	1	10.47	994	0
Rockfish, Blue	15	10.46	19	2.0	19	0.55	322	56
Rockfishes (general)	16	8.72	1	0.1	1	8.72	840	0
Rockfish, Olive	17	8.37	15	1.6	15	0.56	346	43
Rockfish, China	18	6.58	17	1.8	15	0.39	275	33
Cabazon	19	4.51	3	0.3	3	1.50	430	144
Rockfish, Gopher	20	3.52	10	1.1	10	0.35	276	34
Rockfish, Speckled	21	1.50	2	0.2	2	0.75	372	37
Rockfish, Kelp	22	1.44	1	0.1	1	1.44	468	0
Greenling, Kelp	23	1.21	2	0.2	2	0.60	352	9
Sole, Petrale	24	1.01	2	0.2	2	0.51	330	95
Rockfish, Widow	25	0.96	2	0.2	2	0.48	320	94
Rockfish, Greenblotched	26	0.55	1	0.1	1	0.55	325	0

(Table 54. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Mackerel, Pacific (Chub)	27	0.49	1	0.1	1	0.49	331	0
Sanddab, Pacific	28	0.20	2	0.2	2	0.10	213	18
Total		901.34	947	100	928			

C. CPUE***

Catch per Angler Day = 6.36 Catch per Angler Hour = 1.51
 Kg per Angler Day = 6.05 Kg per Angler Hour = 1.43

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 9. Length-Frequency Histogram for Brown Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 3 (Ocean), Quarter 2, 1986.

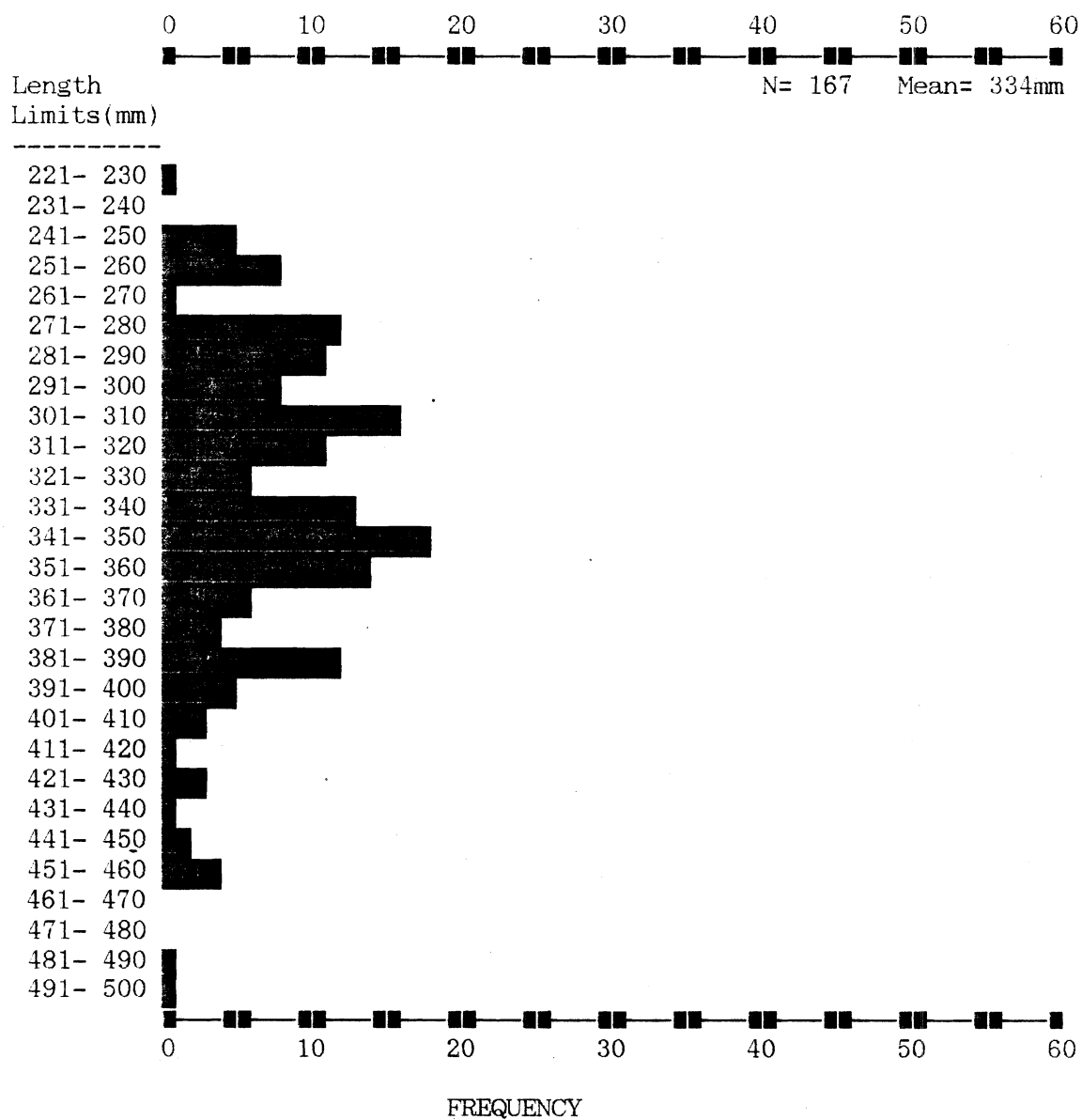


Figure 10. Length-Frequency Histogram for Canary Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 3 (Ocean), Quarter 2, 1986.

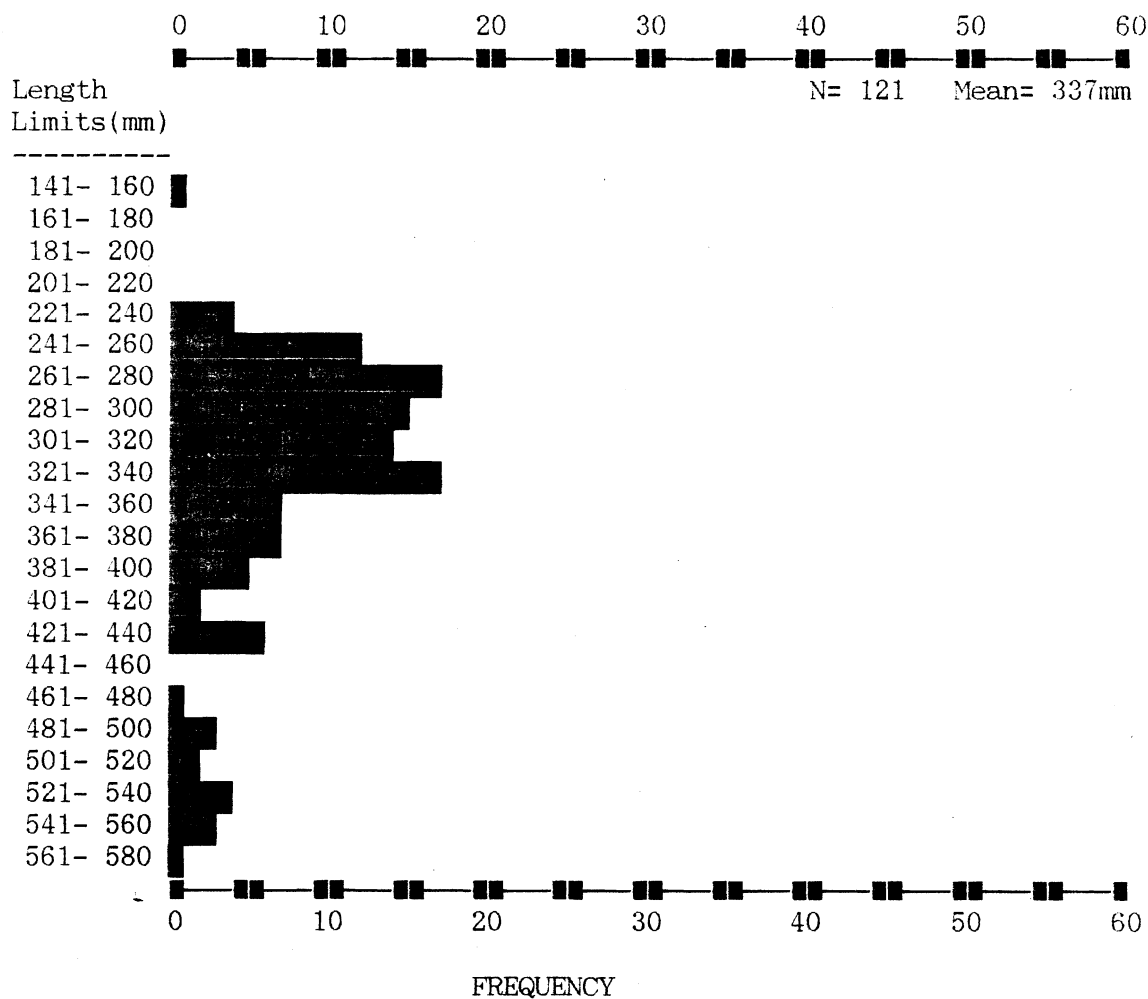


Figure 11. Length-Frequency Histogram for Rosy Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 3 (Ocean), Quarter 2, 1986.

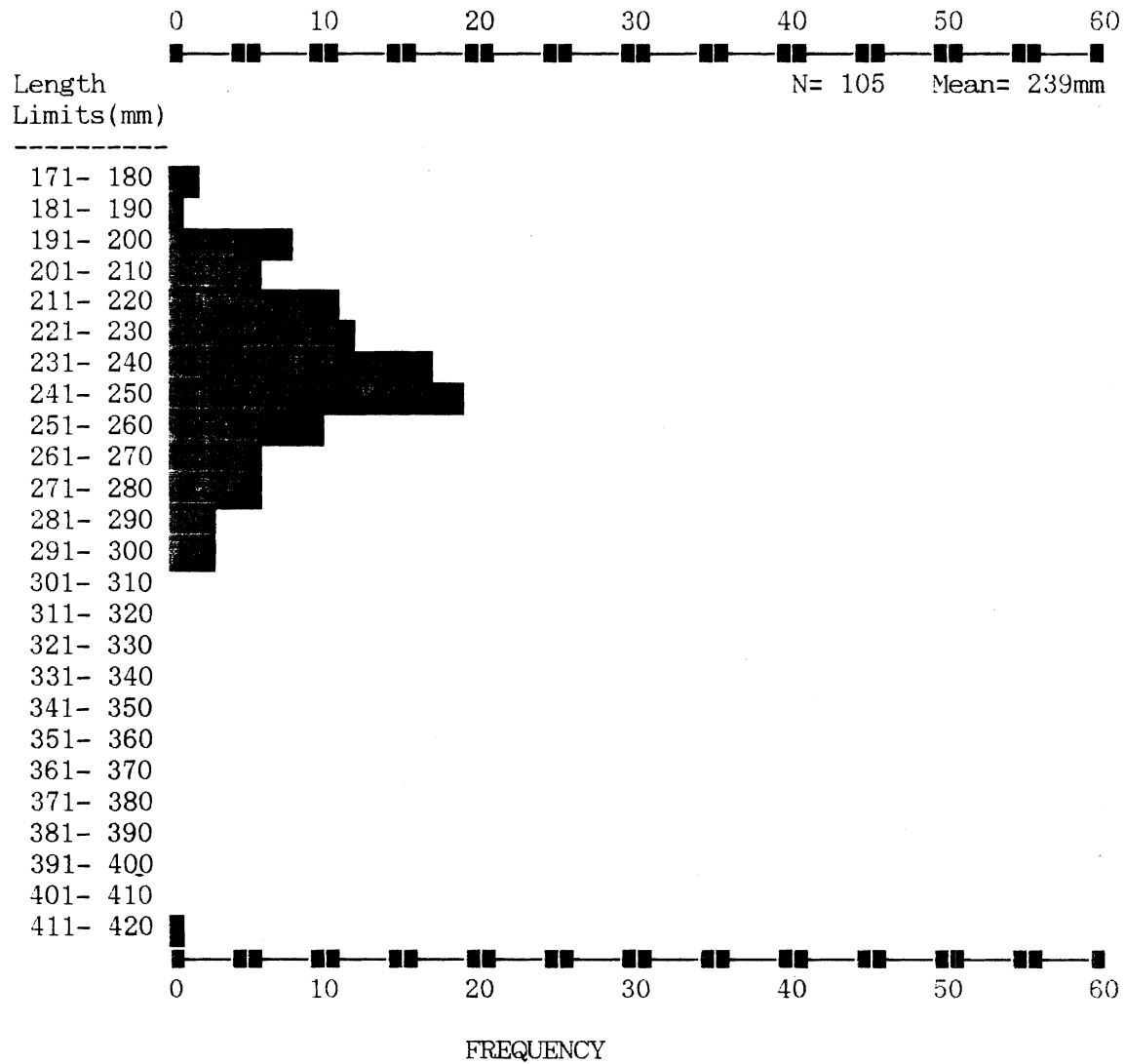


Figure 12. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 3 (Ocean), Quarter 2, 1986.

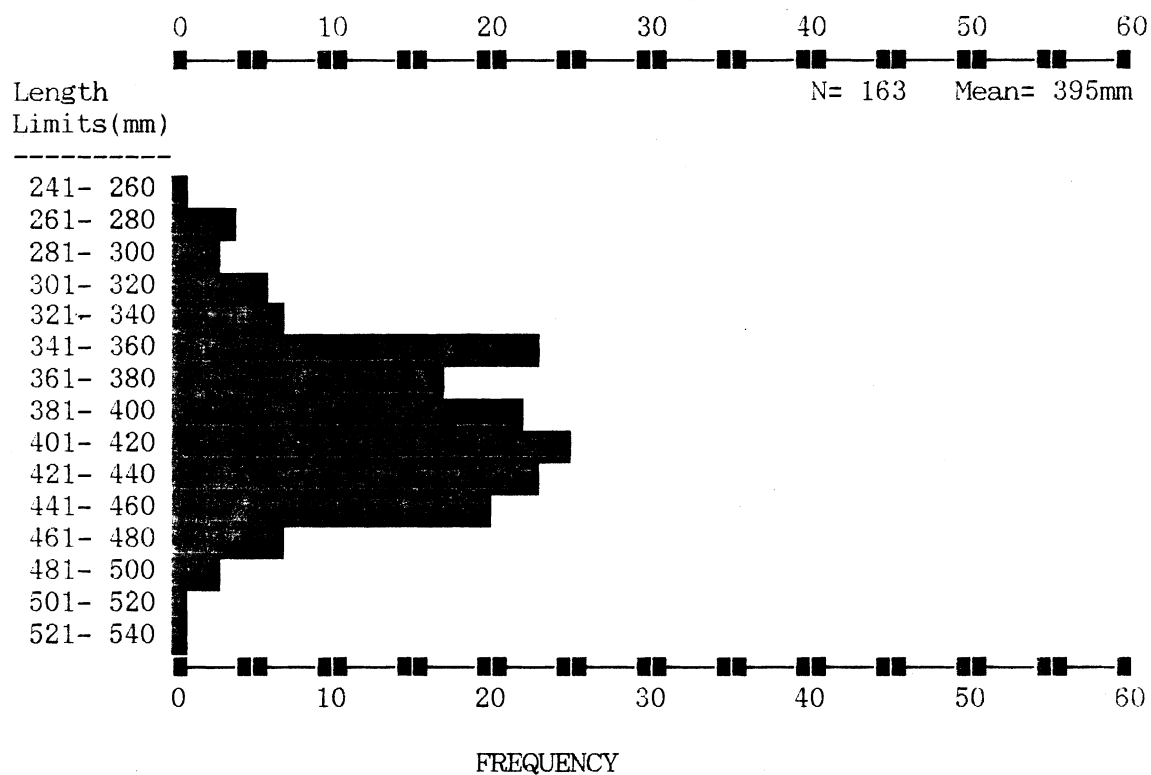


Table 55. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	192
Total Hours Effort for Anglers Intercepted	=	634.8
Total Hours Still to Fish (Incomplete Trips)	=	18.9

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	318	24.0
Perch, Pile	2	310	23.4
Sculpin, Pacific Staghorn	3	291	22.0
Perch, Shiner	4	207	15.6
Surfperches	5	62	4.7
Unidentified Fishes	6	27	2.0
Seaperch, White	7	19	1.4
Croaker, White	8	18	1.4
Surfperch, Walleye	9	17	1.3
Perch, Black	10	9	0.7
Anchovy, Northern	11	7	0.5
Topsmelt	12	7	0.5
Surfperch, Silver	13	7	0.5
Rockfish, Brown	14	4	0.3
Seaperch, Rainbow	15	4	0.3
Seaperch, Rubberlip	16	3	0.2
Sharks	17	2	0.2
Stingrays	18	2	0.2
Silversides	19	2	0.2
Rockfishes (general)	20	2	0.2
Cabazon	21	2	0.2
Flounder, Starry	22	2	0.2
Lingcod	23	1	0.1
Bass, Striped	24	1	0.1
Total		1324	100

C. CPUE

Catch per Angler Day	=	6.90	Catch per Angler Hour	=	2.09
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Table 56. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	192
Total Hours Effort for Anglers Intercepted	=	634.8
Total Hours Still to Fish (Incomplete Trips)	=	18.9

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Perch, Pile	1	310	36.0	0.67	208.32
Jacksmelt	2	283	32.8	0.14	38.90
Perch, Shiner	3	158	18.3	0.05	7.74
Surfperches	4	27	3.1	0.43**	11.61
Seaperch, White	5	19	2.2	0.15	2.76
Surfperch, Walleye	6	17	2.0	0.13	2.26
Croaker, White	7	14	1.6	0.19	2.60
Perch, Black	8	7	0.8	0.13	0.94
Surfperch, Silver	9	7	0.8	0.10	0.68
Anchovy, Northern	10	6	0.7	0.00**	0.00
Rockfish, Brown	11	4	0.5	0.04	0.17
Sculpin, Pacific Staghorn	12	3	0.3	0.00**	0.00
Silversides	13	2	0.2	0.14**	0.28
Cabezon	14	2	0.2	0.35	0.70
Sharks	15	1	0.1	0.00**	0.00
Seaperch, Rainbow	16	1	0.1	0.19	0.19
Flounder, Starry	17	1	0.1	1.37	1.37
Total		862	100		278.53

C. CPUE

Catch per Angler Day	=	4.49	Catch per Angler Hour	=	1.36
Kg per Angler Day	=	1.45	Kg per Angler Hour	=	0.44

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 57. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 192
 Total Hours Effort for Anglers Intercepted = 634.8
 Total Hours Still to Fish (Incomplete Trips) = 18.9

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Perch, Pile	1	205.63	306	39.8	2	0.67	344	6
Jacksmelt	2	32.16	234	30.4	129	0.14	259	43
Perch, Shiner	3	7.74	158	20.5	36	0.05	143	34
Seaperch, White	4	2.76	19	2.5	17	0.15	222	45
Croaker, White	5	2.60	14	1.8	14	0.19	250	36
Surfperch, Walleye	6	2.26	17	2.2	15	0.13	197	30
Flounder, Starry	7	1.37	1	0.1	1	1.37	470	0
Perch, Black	8	0.94	7	0.9	7	0.13	183	30
Cabazon	9	0.70	2	0.3	2	0.35	258	74
Surfperch, Silver	10	0.68	7	0.9	4	0.10	185	5
Seaperch, Rainbow	11	0.19	1	0.1	1	0.19	230	0
Rockfish, Brown	12	0.13	3	0.4	3	0.04	128	27
Total		257.18	769	100	231			

C. CPUE***

Catch per Angler Day = 4.01 Catch per Angler Hour = 1.21
 Kg per Angler Day = 1.34 Kg per Angler Hour = 0.41

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 58. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	7
Total Hours Effort for Anglers Intercepted	=	32.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperches	1	25	80.6
Sculpin, Pacific Staghorn	2	5	16.1
Lingcod	3	1	3.2
Total		31	100

C. CPUE

Catch per Angler Day = 4.43 Catch per Angler Hour = 0.95

Table 59. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 7
 Total Hours Effort for Anglers Intercepted = 32.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Surfperches	1	25	%100.0	0.00**	0.00
Total		25	100		0.00

C. CPUE

Catch per Angler Day = 3.57 Catch per Angler Hour = 0.77
 Kg per Angler Day = 0.00 Kg per Angler Hour = 0.00

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 60. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	7
Total Hours Effort for Anglers Intercepted	=	32.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Total		0.00	0	0	0			

C. CPUE***

Catch per Angler Day	=	0.00	Catch per Angler Hour	=	0.00
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 61. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 111
 Total Hours Effort for Anglers Intercepted = 306.1
 Total Hours Still to Fish (Incomplete Trips) = 18.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	101	49.5
Surfperches	2	35	17.2
Perch, Shiner	3	14	6.9
Seaperch, Striped	4	13	6.4
Unidentified Fishes	5	9	4.4
Croaker, White	6	6	2.9
Jacksmelt	7	4	2.0
Rockfish, Brown	8	3	1.5
Perch, Black	9	3	1.5
Shark, Leopard	10	2	1.0
Greenling, Kelp	11	2	1.0
Surfperch, Walleye	12	2	1.0
Surfperch, Barred	13	2	1.0
Sharks	14	1	0.5
Stingrays	15	1	0.5
Eagle Rays	16	1	0.5
Rockfish, Kelp	17	1	0.5
Lingcod	18	1	0.5
Cabezon	19	1	0.5
Perch, Pile	20	1	0.5
Sandabs	21	1	0.5
Total		204	100

C. CPUE

Catch per Angler Day = 1.84 Catch per Angler Hour = 0.67

Table 62. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 111
 Total Hours Effort for Anglers Intercepted = 306.1
 Total Hours Still to Fish (Incomplete Trips) = 18.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperches	1	13	18.1	0.16**	2.08
Seaperch, Striped	2	13	18.1	0.22	2.88
Sculpin, Pacific Staghorn	3	10	13.9	0.00**	0.00
Perch, Shiner	4	9	12.5	0.02	0.22
Croaker, White	5	6	8.3	0.16	0.95
Jacksmelt	6	3	4.2	0.03	0.08
Rockfish, Brown	7	3	4.2	0.14	0.41
Perch, Black	8	3	4.2	0.13	0.38
Shark, Leopard	9	2	2.8	1.03	2.05
Surfperch, Walleye	10	2	2.8	0.13	0.26
Surfperch, Barred	11	2	2.8	0.19	0.38
Rockfish, Kelp	12	1	1.4	0.19	0.19
Greenling, Kelp	13	1	1.4	0.79	0.79
Lingcod	14	1	1.4	1.05	1.05
Cabezon	15	1	1.4	0.69	0.69
Perch, Pile	16	1	1.4	0.66	0.66
Sandabs	17	1	1.4	0.07	0.07
Total		72	100		13.14

C. CPUE

Catch per Angler Day = 0.65 Catch per Angler Hour = 0.24
 Kg per Angler Day = 0.12 Kg per Angler Hour = 0.04

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 63. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 111
 Total Hours Effort for Anglers Intercepted = 306.1
 Total Hours Still to Fish (Incomplete Trips) = 18.7

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Striped	1	2.88	13	30.2	13	0.22	232	40
Shark, Leopard	2	2.05	2	4.7	2	1.03	388	283
Lingcod	3	1.05	1	2.3	1	1.05	458	0
Croaker, White	4	0.95	6	14.0	6	0.16	235	44
Greenling, Kelp	5	0.79	1	2.3	1	0.79	385	0
Cabezon	6	0.69	1	2.3	1	0.69	342	0
Perch, Pile	7	0.66	1	2.3	1	0.66	342	0
Rockfish, Brown	8	0.41	3	7.0	3	0.14	189	44
Surfperch, Barred	9	0.38	2	4.7	2	0.19	186	117
Perch, Black	10	0.38	3	7.0	3	0.13	178	32
Surfperch, Walleye	11	0.26	2	4.7	2	0.13	200	20
Rockfish, Kelp	12	0.19	1	2.3	1	0.19	232	0
Perch, Shiner	13	0.10	4	9.3	4	0.02	120	23
Sandabs	14	0.07	1	2.3	1	0.07	181	0
Jacksmelt	15	0.05	2	4.7	2	0.03	165	15
Total		10.91	43	100	43			

C. CPUE***

Catch per Angler Day = 0.39 Catch per Angler Hour = 0.14
 Kg per Angler Day = 0.10 Kg per Angler Hour = 0.04

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 64. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	296
Total Hours Effort for Anglers Intercepted	=	1551.1
Total Hours Still to Fish (Incomplete Trips)	=	17.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sharks	1	374	37.3
Sculpin, Pacific Staghorn	2	210	20.9
Croaker, White	3	97	9.7
Shark, Leopard	4	57	5.7
Ray, Bat	5	45	4.5
Bass, Striped	6	28	2.8
Eagle Rays	7	27	2.7
Sturgeon, White	8	25	2.5
Sturgeons (general)	9	22	2.2
Smoothhound, Brown	10	19	1.9
Flounder, Starry	11	18	1.8
Stingrays	12	13	1.3
Perch, Black	13	13	1.3
Sturgeon, Green	14	11	1.1
Jacksmelt	15	10	1.0
Perch, Shiner	16	6	0.6
Rockfish, Brown	17	5	0.5
Bottomfishes (Groundfishes)	18	4	0.4
Unidentified Fishes	19	3	0.3
Bass, Kelp	20	3	0.3
Sharks, Sand Tigers	21	2	0.2
Spiny Dogfish	22	2	0.2
Surfperches	23	2	0.2
Perch, Pile	24	2	0.2
Halibut, California	25	2	0.2
Shark, Sevengill	26	1	0.1

(Table 64. - continued)

Common name	Rank by Number	Number Caught	% by Number
Skate, Starry	27	1	0.1
Seaperch, White	28	1	0.1
Seaperch, Rubberlip	29	1	0.1
Total		1004	100

C. CPUE

Catch per Angler Day = 3.39 Catch per Angler Hour = 0.65

Table 65. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay)
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents Number Landed
and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 296
Total Hours Effort for Anglers Intercepted = 1551.1
Total Hours Still to Fish (Incomplete Trips) = 17.7

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	34	27.2	0.33	11.26
Sturgeon, White	2	17	13.6	19.87	337.81
Flounder, Starry	3	15	12.0	1.05	15.68
Perch, Black	4	13	10.4	0.24	3.16
Shark, Leopard	5	11	8.8	12.41	136.53
Bass, Striped	6	10	8.0	1.96	19.58
Ray, Bat	7	5	4.0	39.18	195.92
Rockfish, Brown	8	5	4.0	0.08	0.40
Smoothhound, Brown	9	4	3.2	3.76	15.03
Bass, Kelp	10	3	2.4	0.10	0.29
Perch, Pile	11	2	1.6	0.29	0.58
Sharks	12	1	0.8	10.10**	10.10
Sturgeons (general)	13	1	0.8	8.69	8.69
Jacksmelt	14	1	0.8	0.47	0.47
Seaperch, White	15	1	0.8	0.43	0.43
Seaperch, Rubberlip	16	1	0.8	0.00**	0.00
Halibut, California	17	1	0.8	10.22	10.22
Total		125	100		766.14

C. CPUE

Catch per Angler Day = 0.42 Catch per Angler Hour = 0.08
Kg per Angler Day = 2.59 Kg per Angler Hour = 0.49

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 66. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay)
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 296
Total Hours Effort for Anglers Intercepted = 1551.1
Total Hours Still to Fish (Incomplete Trips) = 17.7

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	337.81	17	16.0	17	19.87	1363	296
Ray, Bat	2	195.92	5	4.7	5	39.18	1151	392
Flounder, Starry	3	15.68	15	14.2	15	1.05	423	62
Shark, Leopard	4	12.41	1	0.9	1	12.41	1113	0
Croaker, White	5	11.26	34	32.1	27	0.33	304	30
Halibut, California	6	10.22	1	0.9	1	10.22	986	0
Bass, Striped	7	9.79	5	4.7	5	1.96	673	146
Sturgeons (general)	8	8.69	1	0.9	1	8.69	1124	0
Smoothhound, Brown	9	3.76	1	0.9	1	3.76	735	0
Perch, Black	10	3.16	13	12.3	13	0.24	233	32
Perch, Pile	11	0.58	2	1.9	2	0.29	263	4
Jacksmelt	12	0.47	1	0.9	1	0.47	387	0
Seaperch, White	13	0.43	1	0.9	1	0.43	330	0
Rockfish; Brown	14	0.40	5	4.7	5	0.08	162	7
Bass, Kelp	15	0.29	3	2.8	3	0.10	198	39
Sharks	16	0.00	1	0.9	1	0.00	870	0
Total		610.86	106	100	99			

C. CPUE***

Catch per Angler Day = 0.36 Catch per Angler Hour = 0.07
Kg per Angler Day = 2.06 Kg per Angler Hour = 0.39

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 67. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	42
Total Hours Effort for Anglers Intercepted	=	267.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bass, Striped	1	16	44.4
Sturgeons (general)	2	6	16.7
Sculpin, Pacific Staghorn	3	6	16.7
Flounder, Starry	4	3	8.3
Halibut, California	5	2	5.6
Stingrays	6	1	2.8
Salmon	7	1	2.8
Rockfishes (general)	8	1	2.8
Total		36	100

C. CPUE

Catch per Angler Day	=	0.86	Catch per Angler Hour	=	0.13
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Table 68. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	42
Total Hours Effort for Anglers Intercepted	=	267.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Bass, Striped	1	2	66.7	0.82	1.64
Salmon	2	1	33.3	0.00**	0.00
Total		3	100		1.64

C. CPUE

Catch per Angler Day	=	0.07	Catch per Angler Hour	=	0.01
Kg per Angler Day	=	0.04	Kg per Angler Hour	=	0.01

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 69. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 42
 Total Hours Effort for Anglers Intercepted = 267.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	Wt.* (kg)	Ln.** (mm)	SD LN.
Bass, Striped	1	0.82	1	%100.0	1	0.82	516	0
Total		0.82	1	100	1			

C. CPUE***

Catch per Angler Day = 0.02 Catch per Angler Hour = 0.00
 Kg per Angler Day = 0.02 Kg per Angler Hour = 0.00

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 13. Length-Frequency Histogram for Jacksmelt
 Taken by Pier or Dock Anglers Using Hook-and-Line Gear.
 Area 3 (Bay), Quarter 2, 1986.

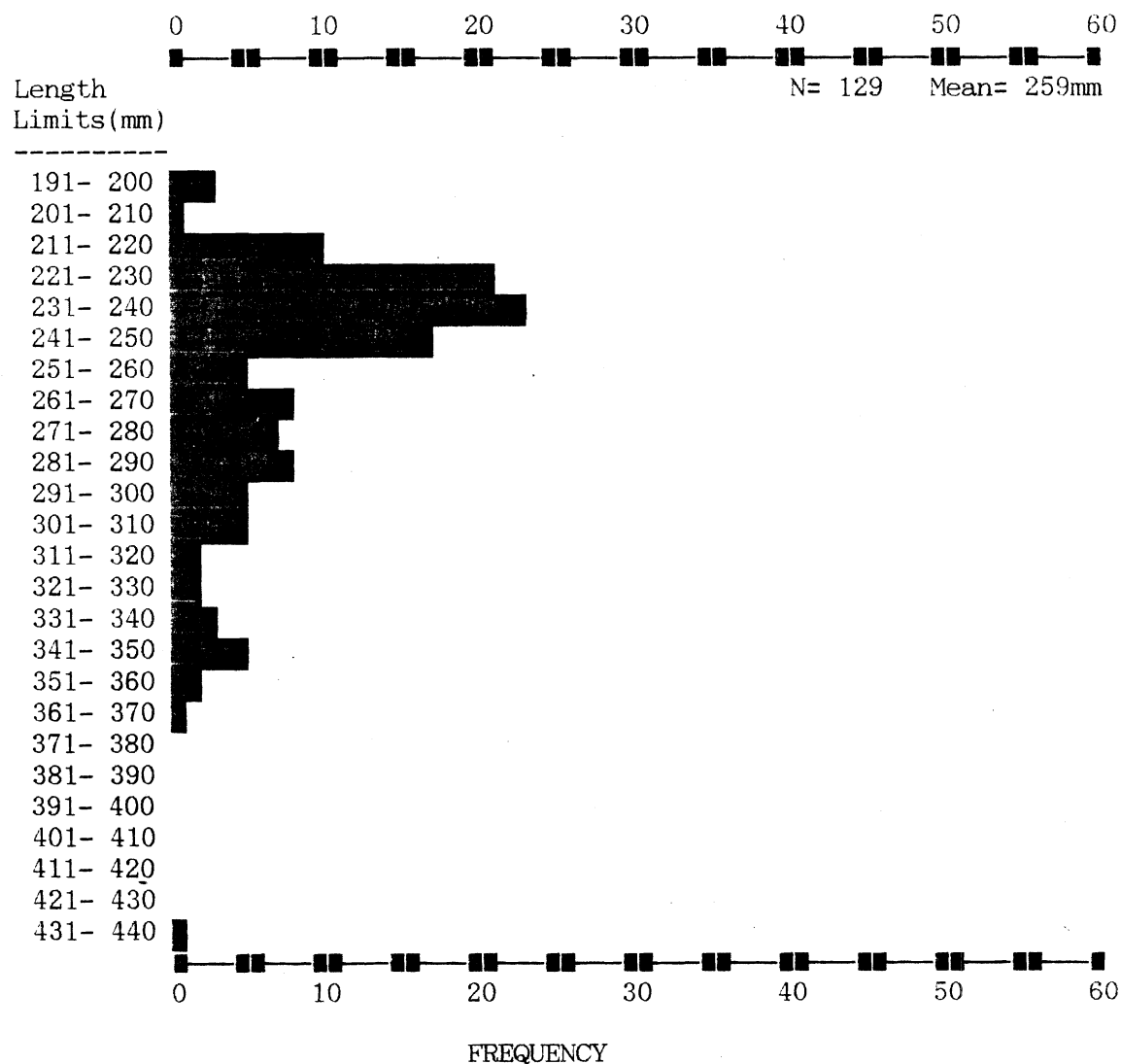


Table 70. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	76
Total Hours Effort for Anglers Intercepted	=	274.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	56	40.6
Surfperches	2	28	20.3
Flounders, Lefteye	3	14	10.1
Surfperch, Walleye	4	9	6.5
Croaker, White	5	8	5.8
Seaperch, White	6	7	5.1
Seaperch, Rainbow	7	4	2.9
Unidentified Fishes	8	2	1.4
Perch, Shiner	9	2	1.4
Jacksmelt	10	1	0.7
Lingcod	11	1	0.7
Perch, Black	12	1	0.7
Fringehead, Sarcastic	13	1	0.7
Sanddab, Pacific	14	1	0.7
Halibut, California	15	1	0.7
Sole, English	16	1	0.7
Flounder, Starry	17	1	0.7
Total		138	100

C. CPUE

Catch per Angler Day = 1.82 Catch per Angler Hour = 0.50

Table 71. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 76
 Total Hours Effort for Anglers Intercepted = 274.6
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Walleye	1	9	21.4	0.13	1.14
Surfperches	2	7	16.7	0.13**	0.91
Seaperch, White	3	7	16.7	0.15	1.06
Croaker, White	4	4	9.5	0.04	0.14
Seaperch, Rainbow	5	4	9.5	0.11	0.45
Perch, Shiner	6	2	4.8	0.02	0.05
Unidentified Fishes	7	1	2.4	0.00**	0.00
Jacksmelt	8	1	2.4	0.07	0.07
Sculpin, Pacific Staghorn	9	1	2.4	0.03	0.03
Perch, Black	10	1	2.4	0.19	0.19
Fringehead, Sarcastic	11	1	2.4	0.00**	0.00
Sanddab, Pacific	12	1	2.4	0.01	0.01
Halibut, California	13	1	2.4	0.00**	0.00
Sole, English	14	1	2.4	0.20	0.20
Flounder, Starry	15	1	2.4	3.42	3.42
Total		42	100		7.66

C. CPUE

Catch per Angler Day = 0.55 Catch per Angler Hour = 0.15
 Kg per Angler Day = 0.10 Kg per Angler Hour = 0.03

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 72. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 76
 Total Hours Effort for Anglers Intercepted = 274.6
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No.. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Flounder, Starry	1	3.42	1	3.3	1	3.42	618	0
Surfperch, Walleye	2	1.14	9	30.0	9	0.13	196	26
Seaperch, White	3	1.06	7	23.3	7	0.15	231	12
Seaperch, Rainbow	4	0.45	4	13.3	4	0.11	190	23
Sole, English	5	0.20	1	3.3	1	0.20	275	0
Perch, Black	6	0.19	1	3.3	1	0.19	211	0
Jacksmelt	7	0.07	1	3.3	1	0.07	218	0
Perch, Shiner	8	0.05	2	6.7	2	0.02	121	2
Croaker, White	9	0.04	1	3.3	1	0.04	150	0
Sculpin, Pacific Staghorn	10	0.03	1	3.3	1	0.03	135	0
Sanddab, Pacific	11	0.01	1	3.3	1	0.01	118	0
Fringehead, Sarcastic	12	0.00	1	3.3	1	0.00	183	0
Total		6.64	30	100	30			

C. CPUE***

Catch per Angler Day = 0.39 Catch per Angler Hour = 0.11
 Kg per Angler Day = 0.09 Kg per Angler Hour = 0.02

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 73. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	24
Total Hours Effort for Anglers Intercepted	=	87.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	36	46.8
Unidentified Fishes	2	11	14.3
Flounders, Lefteye	3	11	14.3
Seaperch, Rubberlip	4	6	7.8
Seaperch, Striped	5	3	3.9
Rockfishes (general)	6	2	2.6
Greenling, Kelp	7	2	2.6
Rockfish, Brown	8	1	1.3
Rockfish, Grass	9	1	1.3
Cabazon	10	1	1.3
Perch, Black	11	1	1.3
Perch, Pile	12	1	1.3
Sole, Sand	13	1	1.3
Total		77	100

C. CPUE

Catch per Angler Day	=	3.21	Catch per Angler Hour	=	0.88
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Table 74. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 24
 Total Hours Effort for Anglers Intercepted = 87.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Rubberlip	1	6	35.3	1.06	6.35
Seaperch, Striped	2	3	17.6	0.30	0.89
Greenling, Kelp	3	2	11.8	0.20	0.41
Rockfish, Brown	4	1	5.9	0.27	0.27
Rockfish, Grass	5	1	5.9	0.17	0.17
Cabazon	6	1	5.9	0.44	0.44
Perch, Black	7	1	5.9	0.39	0.39
Perch, Pile	8	1	5.9	0.56	0.56
Sole, Sand	9	1	5.9	0.10	0.10
Total		17	100		9.57

C. CPUE

Catch per Angler Day = 0.71 Catch per Angler Hour = 0.19
 Kg per Angler Day = 0.40 Kg per Angler Hour = 0.11

* Weight estimated from length-to-weight regression if available.

Table 75. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 24
 Total Hours Effort for Anglers Intercepted = 87.3
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, Rubberlip	1	6.35	6	35.3	6	1.06	381	36
Seaperch, Striped	2	0.89	3	17.6	3	0.30	259	42
Perch, Pile	3	0.56	1	5.9	1	0.56	324	0
Cabezon	4	0.44	1	5.9	1	0.44	290	0
Greenling, Kelp	5	0.41	2	11.8	2	0.20	242	5
Perch, Black	6	0.39	1	5.9	1	0.39	286	0
Rockfish, Brown	7	0.27	1	5.9	1	0.27	246	0
Rockfish, Grass	8	0.17	1	5.9	1	0.17	205	0
Sole, Sand	9	0.10	1	5.9	1	0.10	204	0
Total		9.57	17	100	17			

C. CPUE***

Catch per Angler Day = 0.71 Catch per Angler Hour = 0.19
 Kg per Angler Day = 0.40 Kg per Angler Hour = 0.11

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 76. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 96
 Total Hours Effort for Anglers Intercepted = 374.2
 Total Hours Still to Fish (Incomplete Trips) = 28.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	228	57.9
Sculpin, Pacific Staghorn	2	78	19.8
Surfperches	3	65	16.5
Croaker, White	4	6	1.5
Surfperch, Calico	5	6	1.5
Surfperch, Walleye	6	3	0.8
Perch, Black	7	2	0.5
Flounders, Lefteye	8	2	0.5
Sole, Sand	9	2	0.5
Bass, Striped	10	1	0.3
Perch, Pile	11	1	0.3
Total		394	100

C. CPUE

Catch per Angler Day = 4.10 Catch per Angler Hour = 1.05

Table 77. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 96
 Total Hours Effort for Anglers Intercepted = 374.2
 Total Hours Still to Fish (Incomplete Trips) = 28.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	208	74.8	0.39	80.21
Sculpin, Pacific Staghorn	2	30	10.8	0.00**	0.00
Surfperches	3	21	7.6	0.38**	7.98
Surfperch, Calico	4	6	2.2	0.23	1.38
Croaker, White	5	4	1.4	0.18	0.72
Surfperch, Walleye	6	3	1.1	0.21	0.63
Perch, Black	7	2	0.7	0.39	0.77
Sole, Sand	8	2	0.7	0.15	0.30
Bass, Striped	9	1	0.4	0.42	0.42
Perch, Pile	10	1	0.4	0.84	0.84
Total		278	100		93.25

C. CPUE

Catch per Angler Day = 2.90 Catch per Angler Hour = 0.74
 Kg per Angler Day = 0.97 Kg per Angler Hour = 0.25

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 78. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 96
 Total Hours Effort for Anglers Intercepted = 374.2
 Total Hours Still to Fish (Incomplete Trips) = 28.4

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	80.21	208	91.6	163	0.39	264	46
Surfperch, Calico	2	1.38	6	2.6	6	0.23	241	12
Perch, Pile	3	0.84	1	0.4	1	0.84	370	0
Perch, Black	4	0.77	2	0.9	2	0.39	280	49
Croaker, White	5	0.72	4	1.8	4	0.18	252	13
Surfperch, Walleye	6	0.63	3	1.3	3	0.21	229	8
Bass, Striped	7	0.42	1	0.4	1	0.42	410	0
Sole, Sand	8	0.30	2	0.9	2	0.15	233	4
Total		85.27	227	100	182			

C. CPUE***

Catch per Angler Day = 2.36 Catch per Angler Hour = 0.61
 Kg per Angler Day = 0.89 Kg per Angler Hour = 0.23

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 79. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	195
Total Hours Effort for Anglers Intercepted	=	802.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	739	56.6
Rockfishes (general)	2	127	9.7
Rockfish, Brown	3	75	5.7
Sanddab, Pacific	4	60	4.6
Rockfish, Black-and-yellow	5	44	3.4
Rockfish, Blue	6	42	3.2
Rockfish, Gopher	7	33	2.5
Unidentified Fishes	8	17	1.3
Rockfish, Kelp	9	17	1.3
Rockfish, Canary	10	14	1.1
Rockfish, Black	11	13	1.0
Lingcod	12	13	1.0
Hake, Pacific	13	11	0.8
Rockfish, Copper	14	9	0.7
Rockfish, Yellowtail	15	9	0.7
Rockfish, Rosy	16	9	0.7
Halibut, California	17	7	0.5
Chilipepper	18	6	0.5
Bass, Striped	19	6	0.5
Rockfish, China	20	5	0.4
Sculpin, Pacific Staghorn	21	5	0.4
Cabazon	22	5	0.4
Flounders, Lefteye	23	5	0.4
Rockfish, Vermilion	24	4	0.3
Mackerel, Pacific (Chub)	25	4	0.3
Sharks	26	3	0.2

(Table 79. - continued)

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	27	3	0.2
Rockfish, Rougheye	28	3	0.2
Rockfish, Grass	29	3	0.2
Rockfish, Olive	30	3	0.2
Greenling, Kelp	31	3	0.2
Salmon, Chinook (King)	32	2	0.2
Surfperch, Walleye	33	2	0.2
Spiny Dogfish	34	1	0.1
Rockfish, Yelloweye	35	1	0.1
Rockfish, Squarespot	36	1	0.1
Bass, Kelp	37	1	0.1
Surfperches	38	1	0.1
Total		1306	100

C. CPUE

Catch per Angler Day = 6.70 Catch per Angler Hour = 1.63

Table 80. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 195
 Total Hours Effort for Anglers Intercepted = 802.6
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	649	60.4	0.22	139.75
Rockfish, Brown	2	73	6.8	0.58	42.52
Sanddab, Pacific	3	59	5.5	0.15	8.94
Rockfish, Black-and-yellow	4	44	4.1	0.36	16.06
Rockfish, Blue	5	42	3.9	0.28	11.65
Rockfish, Gopher	6	33	3.1	0.31	10.19
Rockfishes (general)	7	29	2.7	0.42**	12.18
Rockfish, Kelp	8	17	1.6	0.43	7.27
Rockfish, Canary	9	14	1.3	0.34	4.83
Rockfish, Black	10	13	1.2	0.44	5.70
Hake, Pacific	11	11	1.0	0.89	9.84
Rockfish, Copper	12	9	0.8	0.43	3.84
Rockfish, Yellowtail	13	9	0.8	0.22	2.00
Rockfish, Rosy	14	9	0.8	0.19	1.73
Lingcod	15	9	0.8	1.42	12.74
Unidentified Fishes	16	7	0.7	0.00**	0.00
Chilipepper	17	6	0.6	0.19	1.12
Rockfish, China	18	5	0.5	0.45	2.26
Rockfish, Vermilion	19	4	0.4	0.85	3.40
Mackerel, Pacific (Chub)	20	4	0.4	0.52	2.07
Halibut, California	21	4	0.4	5.95	23.81
Jacksmelt	22	3	0.3	0.33	1.00
Rockfish, Grass	23	3	0.3	1.09	3.28
Rockfish, Olive	24	3	0.3	0.52	1.57
Greenling, Kelp	25	3	0.3	0.71	2.13
Salmon, Chinook (King)	26	2	0.2	3.07	6.14
Cabezon	27	2	0.2	0.66	1.31

(Table 80. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Walleye	28	2	0.2	0.12	0.25
Sharks	29	1	0.1	0.00**	0.00
Spiny Dogfish	30	1	0.1	3.00	3.00
Rockfish, Yelloweye	31	1	0.1	0.65	0.65
Rockfish, Squarespot	32	1	0.1	0.10	0.10
Sculpin, Pacific Staghorn	33	1	0.1	0.00**	0.00
Bass, Kelp	34	1	0.1	1.56	1.56
Total		1074	100		342.90

C. CPUE

Catch per Angler Day = 5.51 Catch per Angler Hour = 1.34

Kg per Angler Day = 1.76 Kg per Angler Hour = 0.43

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 81. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 195
Total Hours Effort for Anglers Intercepted = 802.6
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	133.72	621	62.9	92	0.22	265	27
Rockfish, Brown	2	41.93	72	7.3	72	0.58	308	62
Halibut, California	3	23.81	4	0.4	4	5.95	822	62
Rockfish, Black-and-yellow	4	16.06	44	4.5	39	0.36	267	25
Lingcod	5	12.74	9	0.9	9	1.42	498	69
Rockfish, Blue	6	11.65	42	4.3	35	0.28	258	38
Rockfish, Gopher	7	10.19	33	3.3	33	0.31	264	32
Hake, Pacific	8	9.84	11	1.1	11	0.89	488	24
Rockfish, Kelp	9	7.27	17	1.7	17	0.43	305	25
Sanddab, Pacific	10	6.67	44	4.5	26	0.15	237	28
Salmon, Chinook (King)	11	6.14	2	0.2	2	3.07	688	18
Rockfish, Black	12	5.70	13	1.3	13	0.44	306	17
Rockfish, Canary	13	4.83	14	1.4	14	0.34	287	18
Rockfish, Copper	14	3.84	9	0.9	9	0.43	282	37
Rockfish, Vermilion	15	3.40	4	0.4	4	0.85	363	73
Spiny Dogfish	16	3.00	1	0.1	1	3.00	950	0
Rockfish, China	17	2.26	5	0.5	5	0.45	284	55
Rockfish, Grass	18	2.18	2	0.2	2	1.09	361	27
Rockfish, Yellowtail	19	2.00	9	0.9	9	0.22	249	25
Rockfish, Rosy	20	1.73	9	0.9	9	0.19	226	21
Rockfish, Olive	21	1.57	3	0.3	3	0.52	343	24
Bass, Kelp	22	1.56	1	0.1	1	1.56	477	0
Greenling, Kelp	23	1.42	2	0.2	2	0.71	372	15
Cabazon	24	1.31	2	0.2	2	0.66	336	8
Chilipepper	25	1.12	6	0.6	6	0.19	257	4
Jacksmelt	26	1.00	3	0.3	3	0.33	349	3

(Table 81. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yelloweye	27	0.65	1	0.1	1	0.65	330	0
Mackerel, Pacific (Chub)	28	0.52	1	0.1	1	0.52	337	0
Surfperch, Walleye	29	0.25	2	0.2	2	0.12	198	15
Rockfish, Squarespot	30	0.10	1	0.1	1	0.10	202	0
Sharks	31	0.00	1	0.1	1	0.00	605	0
Total		318.48	988	100	429			

C. CPUE***

Catch per Angler Day = 5.07 Catch per Angler Hour = 1.23
 Kg per Angler Day = 1.63 Kg per Angler Hour = 0.40

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 82. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	14
Total Hours Effort for Anglers Intercepted	=	13.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Kelp	1	8	40.0
Cabezon	2	3	15.0
Rockfish, Gopher	3	2	10.0
Bass, Kelp	4	2	10.0
Midshipman, Plainfin	5	1	5.0
Rockfish, Black-and-yellow	6	1	5.0
Rockfish, Olive	7	1	5.0
Greenling, Kelp	8	1	5.0
Lingcod	9	1	5.0
Total		20	100

C. CPUE

Catch per Angler Day	=	1.43	Catch per Angler Hour	=	1.48
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Table 83. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents Number Landed
and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	14
Total Hours Effort for Anglers Intercepted	=	13.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Kelp	1	8	40.0	0.32	2.54
Cabazon	2	3	15.0	0.87	2.60
Rockfish, Gopher	3	2	10.0	0.30	0.60
Bass, Kelp	4	2	10.0	1.33	2.66
Midshipman, Plainfin	5	1	5.0	0.32	0.32
Rockfish, Black-and-yellow	6	1	5.0	0.35	0.35
Rockfish, Olive	7	1	5.0	0.73	0.73
Greenling, Kelp	8	1	5.0	0.25	0.25
Lingcod	9	1	5.0	4.94	4.94
Total		20	100		14.99

C. CPUE

Catch per Angler Day	=	1.43	Catch per Angler Hour	=	1.48
Kg per Angler Day	=	1.07	Kg per Angler Hour	=	1.11

* Weight estimated from length-to-weight regression if available.

Table 84. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Spear Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 14
Total Hours Effort for Anglers Intercepted = 13.5
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	4.94	1	5.0	1	4.94	770	0
Bass, Kelp	2	2.66	2	10.0	2	1.33	454	28
Cabazon	3	2.60	3	15.0	3	0.87	368	49
Rockfish, Kelp	4	2.54	8	40.0	8	0.32	274	27
Rockfish, Olive	5	0.73	1	5.0	1	0.73	382	0
Rockfish, Gopher	6	0.60	2	10.0	2	0.30	266	4
Rockfish, Black-and-yellow	7	0.35	1	5.0	1	0.35	266	0
Midshipman, Plainfin	8	0.32	1	5.0	1	0.32	310	0
Greenling, Kelp	9	0.25	1	5.0	1	0.25	258	0
Total		14.99	20	100	20			

C. CPUE***

Catch per Angler Day = 1.43 Catch per Angler Hour = 1.48
Kg per Angler Day = 1.07 Kg per Angler Hour = 1.11

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 85. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	182
Total Hours Effort for Anglers Intercepted	=	691.7
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Chilipepper	1	581	23.6
Bocaccio	2	471	19.2
Hake, Pacific	3	251	10.2
Rockfishes (general)	4	203	8.3
Rockfish, Greenspotted	5	129	5.3
Rockfish, Blue	6	111	4.5
Rockfish, Yellowtail	7	99	4.0
Sablefish	8	86	3.5
Rockfish, Greenstriped	9	65	2.6
Mackerel, Pacific (Chub)	10	62	2.5
Rockfish, Olive	11	59	2.4
Rockfish, Canary	12	47	1.9
Rockfish, Brown	13	44	1.8
Lingcod	14	41	1.7
Rockfish, Widow	15	30	1.2
Rockfish, Rosy	16	29	1.2
Rockfish, Starry	17	26	1.1
Rockfish, Yelloweye	18	14	0.6
Croaker, White	19	13	0.5
Sanddab, Pacific	20	12	0.5
Rockfish, Black	21	11	0.4
Rockfish, Stripetail	22	11	0.4
Unidentified Fishes	23	8	0.3
Rockfish, Vermilion	24	8	0.3
Rockfish, Rosethorn	25	7	0.3
Rockfish, Gopher	26	6	0.2

(Table 85. - continued)

Common name	Rank by Number	Number Caught	% by Number
Spiny Dogfish	27	5	0.2
Rockfish, Copper	28	5	0.2
Rockfish, Splitnose	29	5	0.2
Rockfish, China	30	4	0.2
Rockfish, Shortbelly	31	3	0.1
Rockfish, Flag	32	3	0.1
Rockfish, Speckled	33	2	0.1
Sole, Petrale	34	2	0.1
Sharks	35	1	0.0
Shark, Blue	36	1	0.0
Salmon, Chinook (King)	37	1	0.0
Thornyhead, Shortspine	38	1	0.0
Total		2457	100

C. CPUE

Catch per Angler Day = 13.50 Catch per Angler Hour = 3.55

Table 86. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	182
Total Hours Effort for Anglers Intercepted	=	691.7
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Chilipepper	1	581	26.3	0.62	360.84
Bocaccio	2	471	21.4	0.55	258.52
Hake, Pacific	3	174	7.9	0.94	164.20
Rockfish, Greenspotted	4	129	5.9	0.61	79.12
Rockfish, Blue	5	111	5.0	0.41	45.54
Rockfish, Yellowtail	6	99	4.5	0.57	56.84
Sablefish	7	85	3.9	0.59	50.21
Rockfishes (general)	8	79	3.6	0.59**	46.61
Rockfish, Greenstriped	9	65	2.9	0.27	17.59
Rockfish, Olive	10	59	2.7	0.69	40.48
Mackerel, Pacific (Chub)	11	55	2.5	0.54	29.46
Rockfish, Canary	12	47	2.1	0.63	29.45
Rockfish, Brown	13	44	2.0	0.90	39.39
Rockfish, Widow	14	30	1.4	0.68	20.50
Rockfish, Rosy	15	29	1.3	0.22	6.30
Rockfish, Starry	16	26	1.2	0.48	12.44
Rockfish, Yelloweye	17	14	0.6	1.95	27.28
Sanddab, Pacific	18	12	0.5	0.19	2.22
Rockfish, Black	19	11	0.5	0.46	5.04
Rockfish, Stripetail	20	11	0.5	0.30	3.30
Lingcod	21	11	0.5	2.30	25.33
Unidentified Fishes	22	8	0.4	0.00**	0.00
Rockfish, Vermilion	23	8	0.4	2.56	20.48
Rockfish, Rosethorn	24	7	0.3	0.27	1.88
Rockfish, Gopher	25	6	0.3	0.37	2.24
Spiny Dogfish	26	5	0.2	1.22	6.11
Rockfish, Copper	27	5	0.2	1.55	7.73

(Table 86. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Splitnose	28	5	0.2	0.52	2.60
Rockfish, China	29	4	0.2	0.56	2.23
Rockfish, Shortbelly	30	3	0.1	0.28	0.84
Rockfish, Flag	31	3	0.1	0.77	2.30
Rockfish, Speckled	32	2	0.1	0.91	1.83
Sole, Petrale	33	2	0.1	0.52	1.03
Sharks	34	1	0.0	1.22**	1.22
Salmon, Chinook (King)	35	1	0.0	4.73	4.73
Thornyhead, Shortspine	36	1	0.0	3.74	3.74
Croaker, White	37	1	0.0	0.39	0.39
Total		2205	100		1379.98

C. CPUE

Catch per Angler Day = 12.12 Catch per Angler Hour = 3.19
 Kg per Angler Day = 7.58 Kg per Angler Hour = 2.00

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 87. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 182
 Total Hours Effort for Anglers Intercepted = 691.7
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	----Mean----		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Chilipepper	1	360.84	581	27.8	450	0.62	364	54
Bocaccio	2	258.52	471	22.5	378	0.55	373	38
Hake, Pacific	3	157.59	167	8.0	121	0.94	495	38
Rockfish, Greenspotted	4	79.12	129	6.2	107	0.61	330	49
Rockfish, Yellowtail	5	56.27	98	4.7	96	0.57	333	55
Sablefish	6	50.21	85	4.1	69	0.59	404	45
Rockfish, Blue	7	45.13	110	5.3	79	0.41	294	41
Rockfish, Olive	8	40.48	59	2.8	52	0.69	370	41
Rockfish, Brown	9	39.39	44	2.1	44	0.90	363	55
Rockfish, Canary	10	29.45	47	2.2	47	0.63	345	42
Rockfish, Yelloweye	11	25.33	13	0.6	13	1.95	442	124
Lingcod	12	25.33	11	0.5	11	2.30	595	33
Mackerel, Pacific (Chub)	13	22.49	42	2.0	42	0.54	340	14
Rockfish, Widow	14	20.50	30	1.4	30	0.68	362	63
Rockfish, Vermilion	15	20.48	8	0.4	8	2.56	542	45
Rockfish, Greenstriped	16	17.59	65	3.1	75	0.27	285	30
Rockfish, Starry	17	12.44	26	1.2	26	0.48	301	49
Rockfish, Copper	18	7.73	5	0.2	5	1.55	412	119
Spiny Dogfish	19	6.11	5	0.2	5	1.22	701	87
Rockfish, Rosy	20	6.08	28	1.3	28	0.22	236	20
Rockfish, Black	21	5.04	11	0.5	11	0.46	309	30
Salmon, Chinook (King)	22	4.73	1	0.0	1	4.73	794	0
Thornyhead, Shortspine	23	3.74	1	0.0	1	3.74	563	0
Rockfish, Stripetail	24	3.30	11	0.5	11	0.30	277	23
Rockfish, Splitnose	25	2.60	5	0.2	5	0.52	351	25
Rockfish, Flag	26	2.30	3	0.1	3	0.77	352	53

(Table 87. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Gopher	27	2.24	6	0.3	6	0.37	283	27
Rockfish, China	28	2.23	4	0.2	4	0.56	303	59
Rockfish, Rosethorn	29	1.88	7	0.3	7	0.27	252	28
Sanddab, Pacific	30	1.85	10	0.5	10	0.19	253	22
Rockfish, Speckled	31	1.83	2	0.1	2	0.91	385	97
Sole, Petrale	32	1.03	2	0.1	2	0.52	341	58
Rockfish, Shortbelly	33	0.84	3	0.1	3	0.28	306	6
Croaker, White	34	0.39	1	0.0	1	0.39	323	0
Total		1315.07	2091	100	1753			

C. CPUE***

Catch per Angler Day = 11.49 Catch per Angler Hour = 3.02
 Kg per Angler Day = 7.23 Kg per Angler Hour = 1.90

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 14. Length-Frequency Histogram for Barred Surfperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

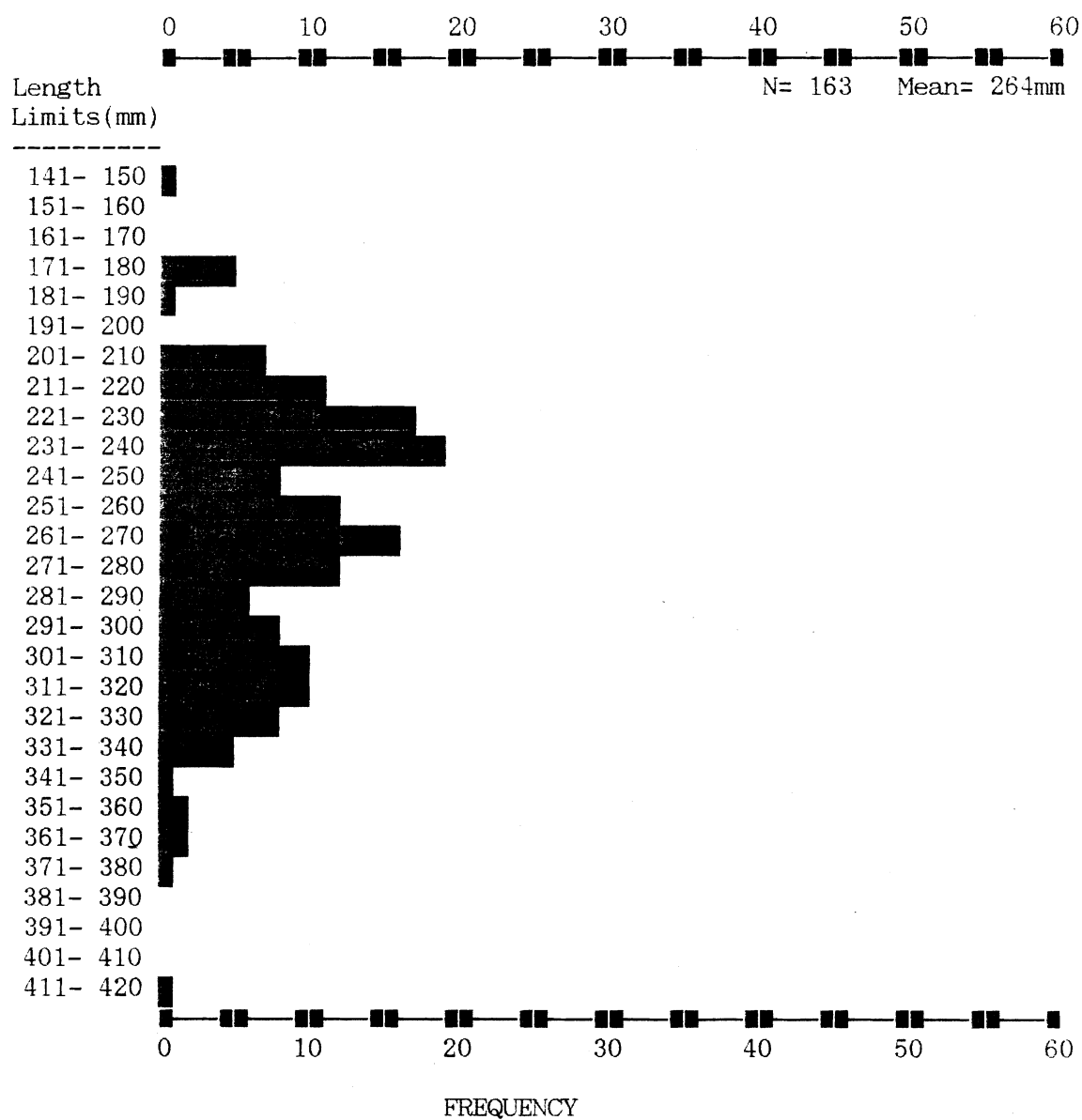


Figure 15. Length-Frequency Histogram for White Croaker
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

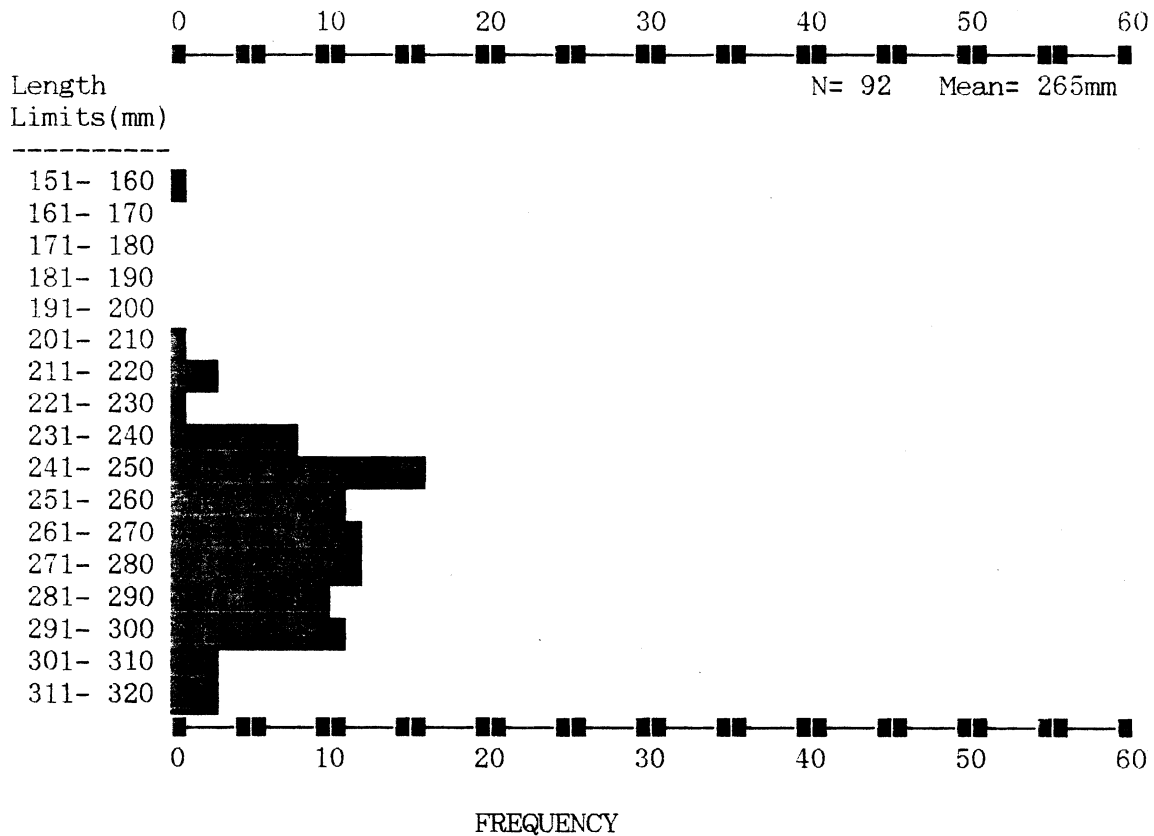


Figure 16. Length-Frequency Histogram for Bocaccio
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

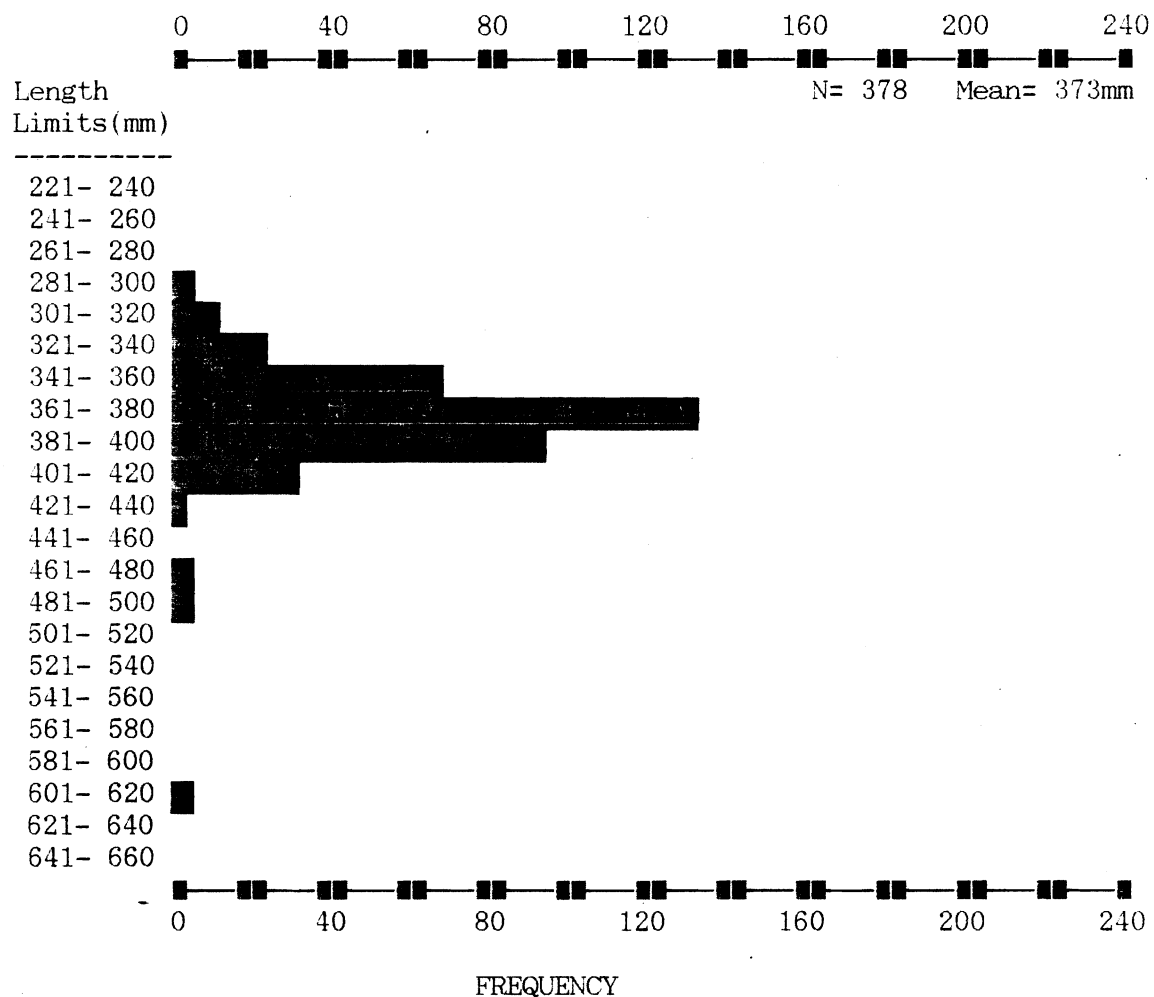


Figure 17. Length-Frequency Histogram for Chilipepper
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

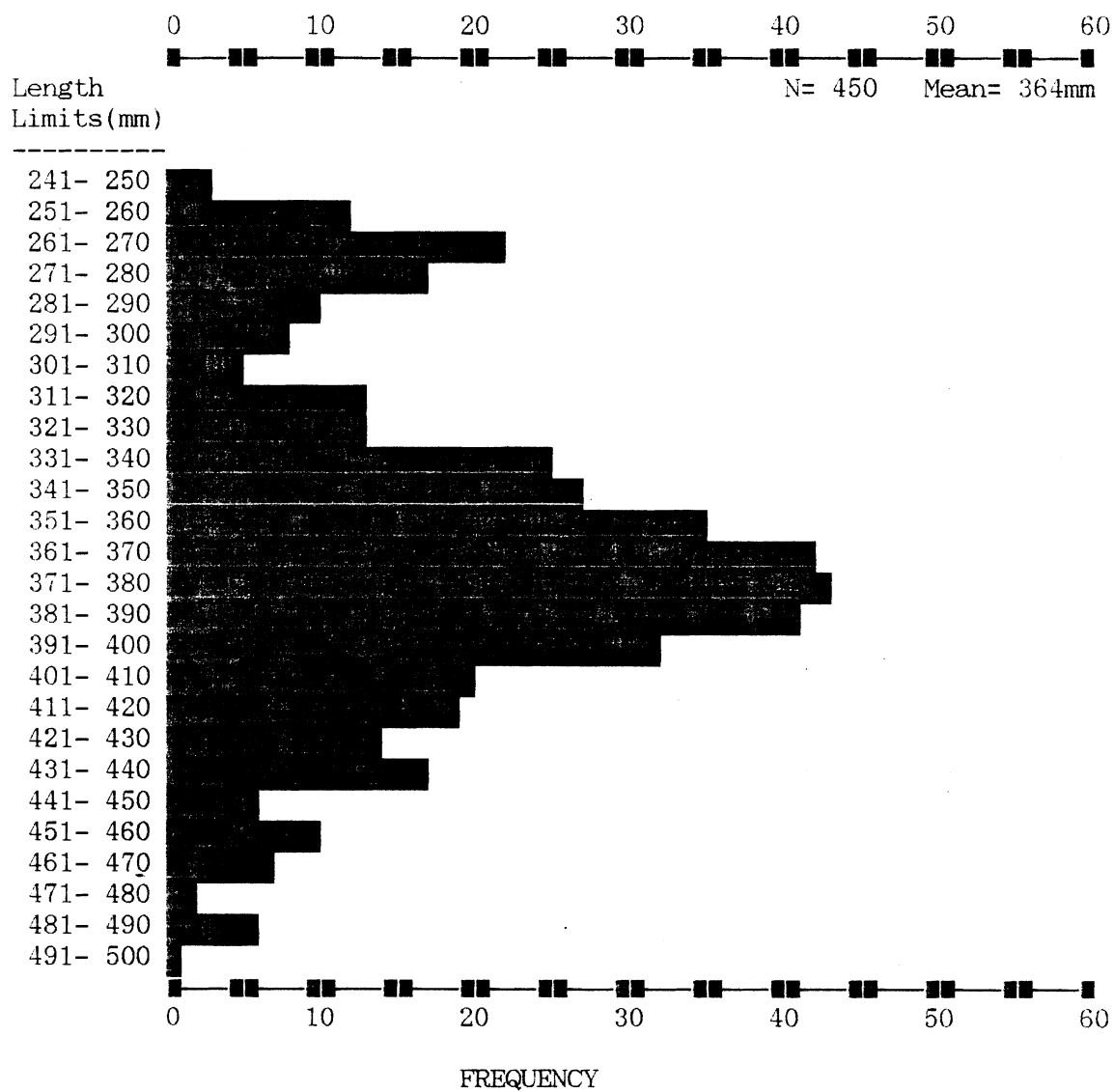


Figure 18. Length-Frequency Histogram for Pacific Hake
Taken by All CPFV Anglers Using Hook-and-Line Gear.
Area 4, Quarter 2, 1986.

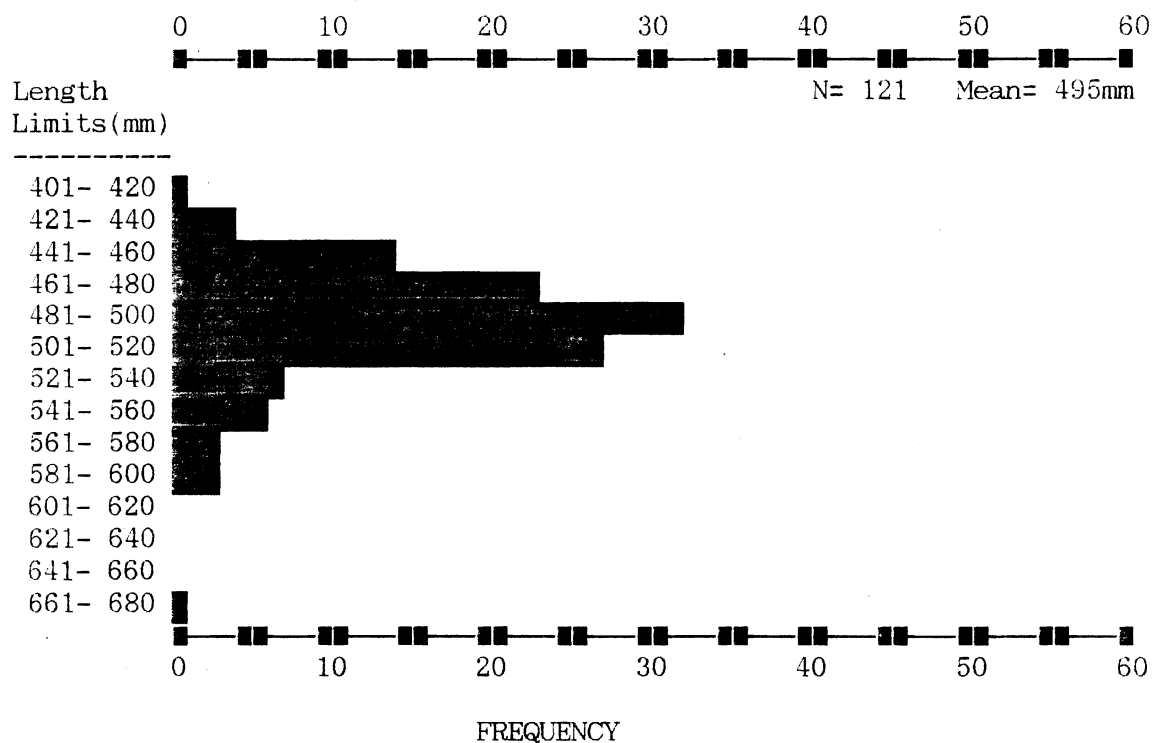


Figure 19. Length-Frequency Histogram for Pacific (Chub) Mackerel
Taken by All CPFV Anglers Using Hook-and-Line Gear.
Area 4, Quarter 2, 1986.

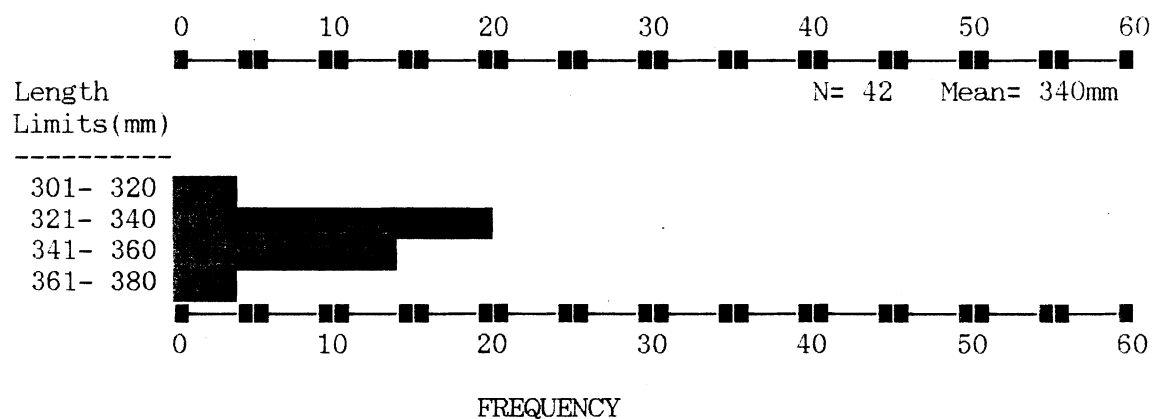


Figure 20. Length-Frequency Histogram for Greenspotted Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

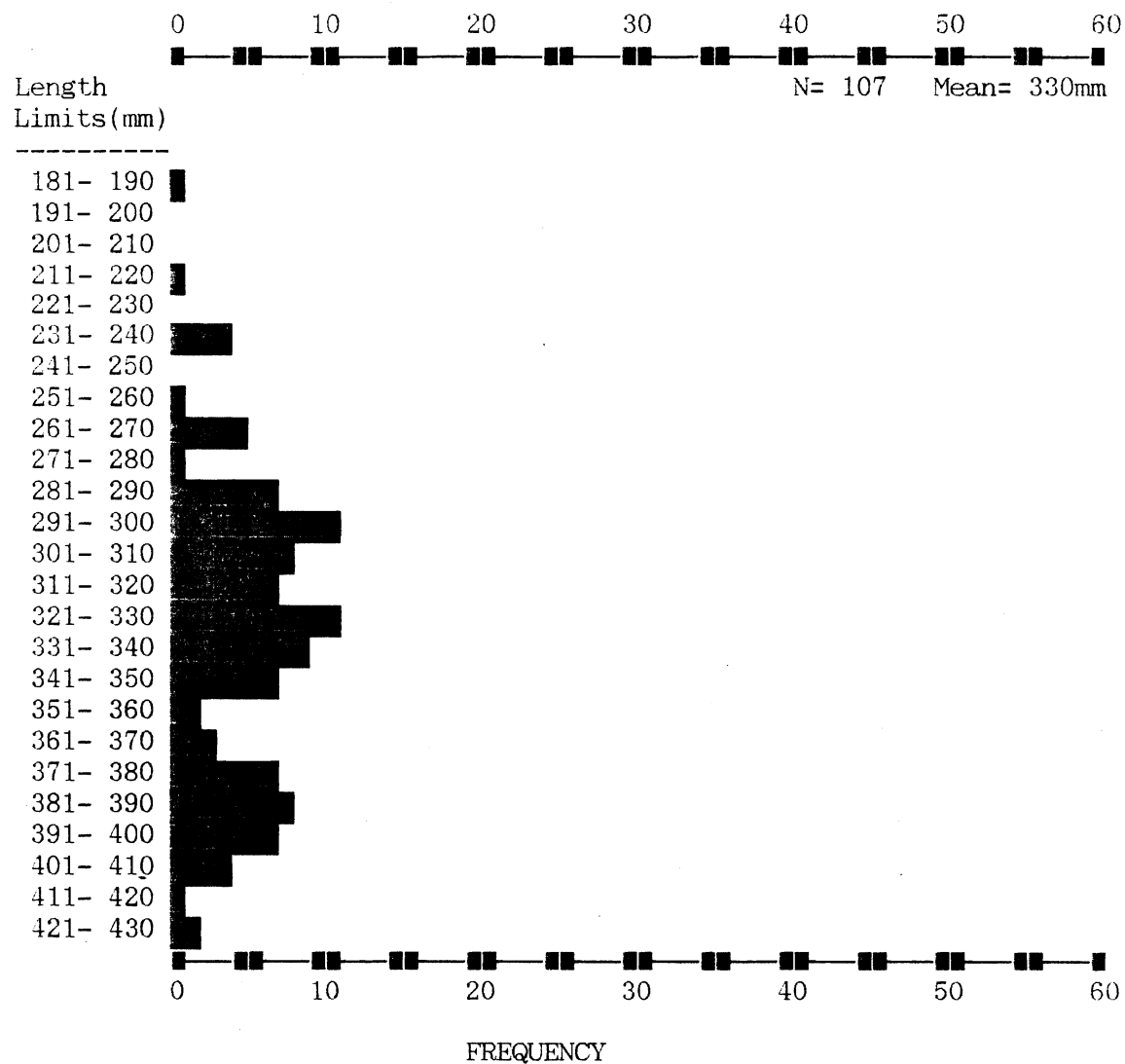


Figure 21. Length-Frequency Histogram for Greenstriped Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

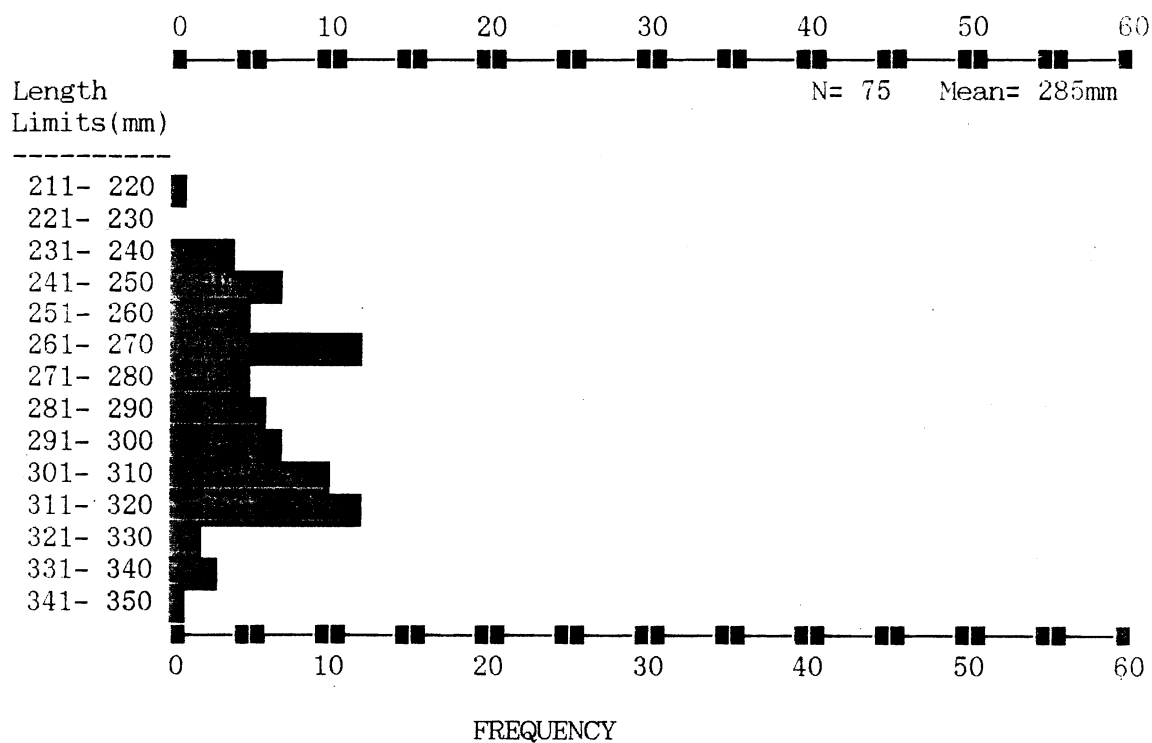


Figure 22. Length-Frequency Histogram for Yellowtail Rockfish
Taken by All CPFV Anglers Using Hook-and-Line Gear.
Area 4, Quarter 2, 1986.

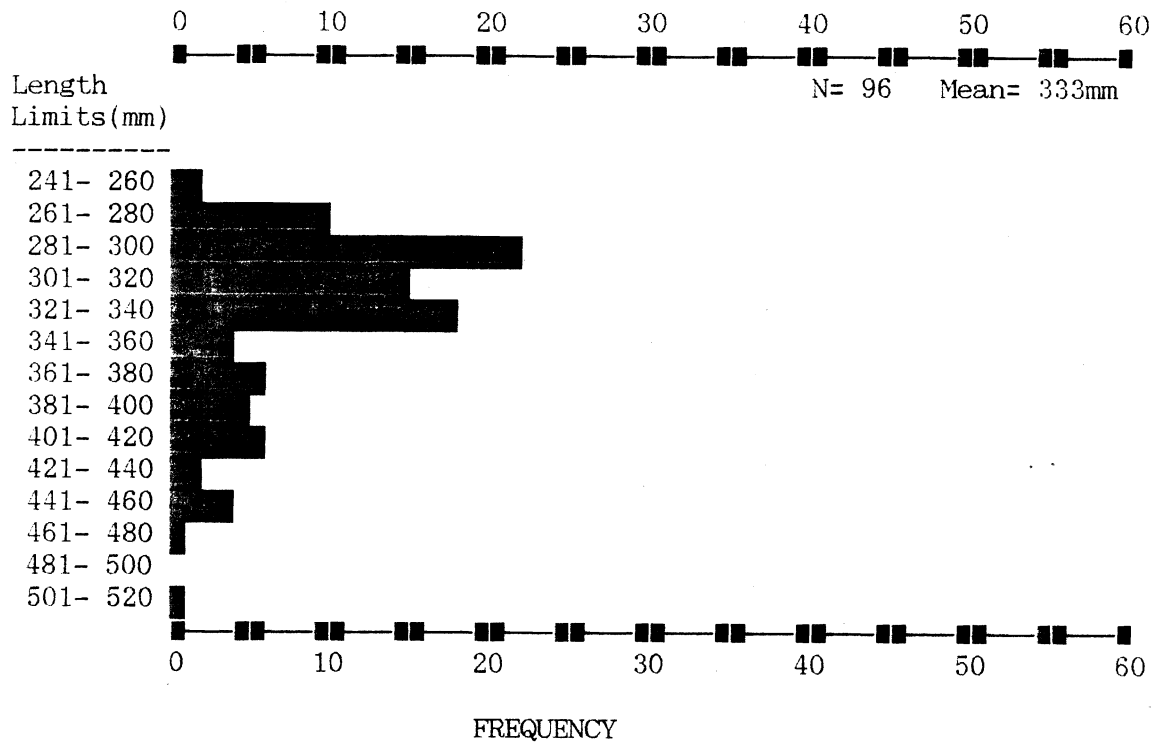


Figure 23. Length-Frequency Histogram for Sablefish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 2, 1986.

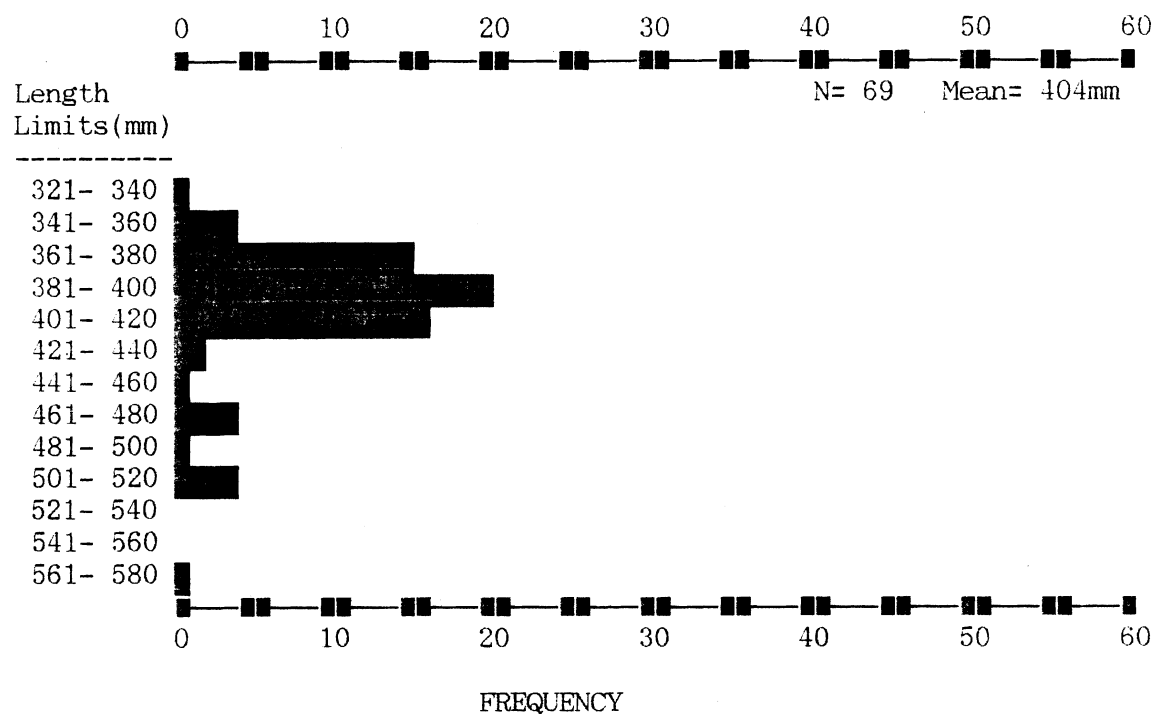


Table 88. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	94
Total Hours Effort for Anglers Intercepted	=	208.2
Total Hours Still to Fish (Incomplete Trips)	=	0.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	96	35.8
Surfperch, Barred	2	37	13.8
Surfperches	3	32	11.9
Jack Mackerel	4	15	5.6
Perch, Shiner	5	15	5.6
Surfperch, Walleye	6	14	5.2
Jacksmelt	7	12	4.5
Surfperch, Silver	8	11	4.1
Queenfish	9	10	3.7
Cabazon	10	6	2.2
Bocaccio	11	5	1.9
Perch, Pile	12	4	1.5
Unidentified Fishes	13	3	1.1
Halibut, California	14	3	1.1
Sculpin, Pacific Staghorn	15	2	0.7
Guitarfishes	16	1	0.4
Skates	17	1	0.4
Ray, Bat	18	1	0.4
Total		268	100

C. CPUE

Catch per Angler Day	=	2.85	Catch per Angler Hour	=	1.29
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Table 89. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 94
 Total Hours Effort for Anglers Intercepted = 208.2
 Total Hours Still to Fish (Incomplete Trips) = 0.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	47	28.3	0.13	6.28
Surfperch, Barred	2	31	18.7	0.20	6.19
Jack Mackerel	3	15	9.0	0.00**	0.00
Perch, Shiner	4	15	9.0	0.02	0.32
Surfperch, Walleye	5	14	8.4	0.10	1.45
Surfperch, Silver	6	11	6.6	0.10	1.07
Queenfish	7	10	6.0	0.06	0.59
Surfperches	8	9	5.4	0.14**	1.26
Jacksmelt	9	4	2.4	0.36	1.44
Bocaccio	10	4	2.4	0.00**	0.00
Perch, Pile	11	4	2.4	0.44	1.76
Skates	12	1	0.6	0.00**	0.00
Cabazon	13	1	0.6	0.38	0.38
Total		166	100		20.74

C. CPUE

Catch per Angler Day = 1.77 Catch per Angler Hour = 0.80
 Kg per Angler Day = 0.22 Kg per Angler Hour = 0.10

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 90. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 94
 Total Hours Effort for Anglers Intercepted = 208.2
 Total Hours Still to Fish (Incomplete Trips) = 0.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	4.20	21	24.7	17	0.20	214	37
Croaker, White	2	3.07	23	27.1	23	0.13	226	26
Surfperch, Walleye	3	1.45	14	16.5	14	0.10	188	15
Perch, Pile	4	0.88	2	2.4	2	0.44	296	50
Jacksmelt	5	0.72	2	2.4	2	0.36	355	38
Surfperch, Silver	6	0.58	6	7.1	6	0.10	180	31
Cabazon	7	0.38	1	1.2	1	0.38	274	0
Perch, Shiner	8	0.26	12	14.1	10	0.02	117	14
Queenfish	9	0.24	4	4.7	4	0.06	170	46
Total		11.78	85	100	79			

C. CPUE***

Catch per Angler Day = 0.90 Catch per Angler Hour = 0.41
 Kg per Angler Day = 0.13 Kg per Angler Hour = 0.06

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 91. Sampled Effort, Ranked Catch and CPUE for Area 5
in 1986 for Quarter 2, by Beach or Bank Anglers Using
Hook-and-Line Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	67
Total Hours Effort for Anglers Intercepted	=	173.0
Total Hours Still to Fish (Incomplete Trips)	=	19.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	92	56.1
Surfperch, Silver	2	21	12.8
Surfperch, Calico	3	13	7.9
Seaperch, Striped	4	12	7.3
Surfperch, Walleye	5	10	6.1
Perch, Black	6	3	1.8
Sharks	7	2	1.2
Rockfishes (general)	8	2	1.2
Rockfish, Brown	9	2	1.2
Rockfish, Grass	10	2	1.2
Cabazon	11	2	1.2
Sand bass, Barred	12	2	1.2
Seabass, White	13	1	0.6
Total		164	100

C. CPUE

Catch per Angler Day = 2.45 Catch per Angler Hour = 0.95

Table 92. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 67
 Total Hours Effort for Anglers Intercepted = 173.0
 Total Hours Still to Fish (Incomplete Trips) = 19.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	72	53.7	0.49	35.10
Surfperch, Silver	2	21	15.7	0.15	3.07
Surfperch, Calico	3	13	9.7	0.25	3.19
Seaperch, Striped	4	12	9.0	0.52	6.21
Surfperch, Walleye	5	4	3.0	0.64	2.56
Perch, Black	6	3	2.2	0.39	1.16
Rockfish, Brown	7	2	1.5	0.00**	0.00
Rockfish, Grass	8	2	1.5	0.38	0.77
Cabazon	9	2	1.5	1.57	3.15
Sand bass, Barred	10	2	1.5	0.49	0.98
Seabass, White	11	1	0.7	4.28	4.28
Total		134	100		60.46

C. CPUE

Catch per Angler Day = 2.00 Catch per Angler Hour = 0.77
 Kg per Angler Day = 0.90 Kg per Angler Hour = 0.35

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 93. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 67
 Total Hours Effort for Anglers Intercepted = 173.0
 Total Hours Still to Fish (Incomplete Trips) = 19.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	31.20	64	51.6	64	0.49	287	44
Seaperch, Striped	2	6.21	12	9.7	11	0.52	315	22
Seabass, White	3	4.28	1	0.8	1	4.28	775	0
Surfperch, Calico	4	3.19	13	10.5	13	0.25	242	33
Cabazon	5	3.15	2	1.6	2	1.57	463	25
Surfperch, Silver	6	3.07	21	16.9	10	0.15	208	22
Surfperch, Walleye	7	2.56	4	3.2	4	0.64	301	52
Perch, Black	8	1.16	3	2.4	3	0.39	283	12
Sand bass, Barred	9	0.98	2	1.6	2	0.49	333	18
Rockfish, Grass	10	0.77	2	1.6	2	0.38	262	6
Total		56.56	124	100	112			

C. CPUE***

Catch per Angler Day = 1.85 Catch per Angler Hour = 0.72
 Kg per Angler Day = 0.84 Kg per Angler Hour = 0.33

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 94. Sampled Effort, Ranked Catch and CPUE for Area 5
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents All Fish Captured,
Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	160
Total Hours Effort for Anglers Intercepted	=	767.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Gopher	1	96	17.9
Salmon, Chinook (King)	2	61	11.4
Rockfishes (general)	3	60	11.2
Lingcod	4	47	8.8
Rockfish, Canary	5	38	7.1
Halibut, California	6	38	7.1
Mackerel, Pacific (Chub)	7	28	5.2
Rockfish, Brown	8	24	4.5
Croaker, White	9	20	3.7
Rockfish, Blue	10	18	3.4
Ray, Bat	11	12	2.2
Rockfish, Vermilion	12	12	2.2
Rockfish, Copper	13	10	1.9
Rockfish, Rosy	14	10	1.9
Rockfish; Olive	15	8	1.5
Rockfish, China	16	7	1.3
Salmon	17	6	1.1
Rockfish, Grass	18	6	1.1
Skates	19	5	0.9
Rockfish, Starry	20	5	0.9
Rockfish, Yellowtail	21	4	0.7
Rockfish, Black-and-yellow	22	4	0.7
Bocaccio	23	3	0.6
Sanddab, Pacific	24	3	0.6
Chilipepper	25	2	0.4
Treefish	26	2	0.4

(Table 94. - continued)

Common name	Rank by Number	Number Caught	% by Number
Unidentified Fishes	27	1	0.2
Jacksnelt	28	1	0.2
Rockfish, Black	29	1	0.2
Sand bass, Spotted	30	1	0.2
Sand bass, Barred	31	1	0.2
Flounder, Starry	32	1	0.2
Total		535	100

C. CPUE

Catch per Angler Day = 3.34 Catch per Angler Hour = 0.70

Table 95. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	160
Total Hours Effort for Anglers Intercepted	=	767.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Gopher	1	95	24.2	0.34	32.28
Salmon, Chinook (King)	2	54	13.7	4.52	243.93
Rockfishes (general)	3	39	9.9	1.49**	58.11
Rockfish, Canary	4	38	9.7	0.43	16.18
Rockfish, Brown	5	24	6.1	0.73	17.43
Halibut, California	6	23	5.9	2.88	66.17
Lingcod	7	17	4.3	2.14	36.42
Rockfish, Blue	8	15	3.8	0.30	4.57
Rockfish, Vermilion	9	12	3.1	0.80	9.55
Rockfish, Copper	10	10	2.5	0.77	7.72
Rockfish, Rosy	11	10	2.5	0.28	2.81
Mackerel, Pacific (Chub)	12	10	2.5	0.54	5.37
Rockfish, Olive	13	8	2.0	0.52	4.19
Rockfish, China	14	7	1.8	0.58	4.04
Rockfish, Grass	15	6	1.5	0.49	2.94
Rockfish, Starry	16	5	1.3	0.67	3.37
Rockfish, Yellowtail	17	4	1.0	0.40	1.59
Rockfish, Black-and-yellow	18	4	1.0	0.47	1.87
Bocaccio	19	3	0.8	0.38	1.15
Chilipepper	20	2	0.5	0.00**	0.00
Treefish	21	2	0.5	0.91	1.82
Salmon	22	1	0.3	4.94	4.94
Jacksmelt	23	1	0.3	0.58	0.58
Rockfish, Black	24	1	0.3	0.48	0.48
Sanddab, Pacific	25	1	0.3	0.10	0.10
Flounder, Starry	26	1	0.3	3.61	3.61
Total		393	100		531.23

C. CPUE

Catch per Angler Day	=	2.46	Catch per Angler Hour	=	0.51
Kg per Angler Day	=	3.32	Kg per Angler Hour	=	0.69

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 96. Sampled Effort, Ranked Catch and CPUE for Area 5
in 1986 for Quarter 2, by Private or Rental Boat Anglers Using
Hook-and-Line Gear. Catch Represents Only the Fish
Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 160
Total Hours Effort for Anglers Intercepted = 767.1
Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Salmon, Chinook (King)	1	225.86	50	14.5	50	4.52	762	128
Halibut, California	2	66.17	23	6.6	23	2.88	636	95
Lingcod	3	36.42	17	4.9	17	2.14	547	147
Rockfish, Gopher	4	31.94	94	27.2	75	0.34	274	24
Rockfish, Brown	5	17.43	24	6.9	24	0.73	338	51
Rockfish, Canary	6	16.18	38	11.0	34	0.43	306	29
Rockfish, Vermilion	7	9.55	12	3.5	12	0.80	347	85
Rockfish, Copper	8	7.72	10	2.9	10	0.77	342	50
Mackerel, Pacific (Chub)	9	5.37	10	2.9	10	0.54	341	9
Salmon	10	4.94	1	0.3	1	4.94	806	0
Rockfish, Blue	11	4.57	15	4.3	15	0.30	267	35
Rockfish, China	12	4.04	7	2.0	7	0.58	314	23
Rockfish, Olive	13	3.67	7	2.0	7	0.52	338	47
Flounder, Starry	14	3.61	1	0.3	1	3.61	628	0
Rockfish, Starry	15	3.37	5	1.4	5	0.67	333	65
Rockfish, Grass	16	2.94	6	1.7	6	0.49	277	42
Rockfish, Rosy	17	2.81	10	2.9	10	0.28	258	17
Rockfish, Black-and-yellow	18	1.87	4	1.2	4	0.47	290	12
Treefish	19	1.82	2	0.6	2	0.91	374	45
Rockfish, Yellowtail	20	1.59	4	1.2	4	0.40	300	35
Bocaccio	21	1.15	3	0.9	3	0.38	334	34
Jacksmelt	22	0.58	1	0.3	1	0.58	412	0
Rockfish, Black	23	0.48	1	0.3	1	0.48	316	0
Sanddab, Pacific	24	0.10	1	0.3	1	0.10	215	0
Total		454.19	346	100	323			

C. CPUE***

Catch per Angler Day = 2.16 Catch per Angler Hour = 0.45
Kg per Angler Day = 2.84 Kg per Angler Hour = 0.59

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 97. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	140
Total Hours Effort for Anglers Intercepted	=	440.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bocaccio	1	329	33.8
Rockfishes (general)	2	262	26.9
Chilipepper	3	92	9.5
Rockfish, Yellowtail	4	47	4.8
Rockfish, Rosy	5	34	3.5
Rockfish, Copper	6	29	3.0
Rockfish, Vermilion	7	29	3.0
Rockfish, Gopher	8	27	2.8
Rockfish, Canary	9	23	2.4
Rockfish, Starry	10	17	1.7
Lingcod	11	16	1.6
Rockfish, Brown	12	15	1.5
Rockfish, Olive	13	11	1.1
Rockfish, Blue	14	10	1.0
Rockfish, Widow	15	8	0.8
Rockfish, Greenstriped	16	6	0.6
Rockfish, Greenspotted	17	4	0.4
Spiny Dogfish	18	3	0.3
Rockfish, Yelloweye	19	3	0.3
Rockfish, China	20	2	0.2
Rockfish, Flag	21	2	0.2
Skates	22	1	0.1
Hake, Pacific	23	1	0.1
Cabazon	24	1	0.1
Whitefish, Ocean	25	1	0.1
Total		973	100

C. CPUE

Catch per Angler Day = 6.95 Catch per Angler Hour = 2.21

Table 98. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 140
 Total Hours Effort for Anglers Intercepted = 440.8
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Bocaccio	1	328	34.7	0.55	179.04
Rockfishes (general)	2	253	26.8	0.55**	139.15
Chilipepper	3	90	9.5	0.62	55.77
Rockfish, Yellowtail	4	47	5.0	0.33	15.55
Rockfish, Rosy	5	34	3.6	0.23	7.67
Rockfish, Copper	6	29	3.1	1.08	31.46
Rockfish, Vermilion	7	29	3.1	0.99	28.73
Rockfish, Gopher	8	27	2.9	0.32	8.69
Rockfish, Canary	9	23	2.4	0.36	8.22
Rockfish, Starry	10	17	1.8	0.48	8.11
Rockfish, Brown	11	15	1.6	0.71	10.63
Rockfish, Olive	12	11	1.2	0.44	4.81
Rockfish, Blue	13	10	1.1	0.35	3.50
Rockfish, Widow	14	8	0.8	0.80	6.37
Rockfish, Greenstriped	15	6	0.6	0.27	1.61
Lingcod	16	5	0.5	2.25	11.23
Rockfish, Greenspotted	17	4	0.4	0.55	2.19
Rockfish, Yelloweye	18	3	0.3	0.87	2.61
Rockfish, China	19	2	0.2	0.55	1.11
Rockfish, Flag	20	2	0.2	0.76	1.51
Cabazon	21	1	0.1	0.72	0.72
Whitefish, Ocean	22	1	0.1	1.32	1.32
Total		945	100		529.97

C. CPUE

Catch per Angler Day = 6.75 Catch per Angler Hour = 2.14
 Kg per Angler Day = 3.79 Kg per Angler Hour = 1.20

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 99. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1986 for Quarter 2, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 140
 Total Hours Effort for Anglers Intercepted = 440.8
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Bocaccio	1	153.93	282	41.3	175	0.55	375	25
Chilipepper	2	54.53	88	12.9	68	0.62	369	33
Rockfish, Copper	3	31.46	29	4.3	29	1.08	375	79
Rockfish, Vermilion	4	28.73	29	4.3	29	0.99	369	99
Rockfish, Yellowtail	5	15.55	47	6.9	47	0.33	278	46
Rockfish, Brown	6	10.63	15	2.2	15	0.71	337	43
Rockfish, Gopher	7	8.69	27	4.0	27	0.32	269	23
Rockfish, Canary	8	8.22	23	3.4	23	0.36	288	31
Rockfish, Starry	9	8.11	17	2.5	17	0.48	306	27
Rockfish, Rosy	10	7.44	33	4.8	33	0.23	237	28
Lingcod	11	6.74	3	0.4	3	2.25	591	10
Rockfish, Widow	12	6.37	8	1.2	8	0.80	385	52
Rockfish, Olive	13	4.81	11	1.6	11	0.44	314	62
Rockfish, Blue	14	3.50	10	1.5	10	0.35	282	29
Rockfish, Yelloweye	15	2.61	3	0.4	3	0.87	357	56
Rockfish, Greenspotted	16	2.19	4	0.6	4	0.55	319	52
Rockfish, Flag	17	1.51	2	0.3	2	0.76	354	39
Rockfish, Greenstriped	18	1.34	5	0.7	5	0.27	285	27
Whitefish, Ocean	19	1.32	1	0.1	1	1.32	481	0
Rockfish, China	20	1.11	2	0.3	2	0.55	312	2
Cabazon	21	0.72	1	0.1	1	0.72	348	0
Rockfishes (general)	22	0.00	42	6.2	0	0.00	0	0
Total		359.49	682	100	513			

C. CPUE***

Catch per Angler Day = 4.87 Catch per Angler Hour = 1.55
 Kg per Angler Day = 2.57 Kg per Angler Hour = 0.82

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 24. Length-Frequency Histogram for Barred Surfperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 2, 1986.

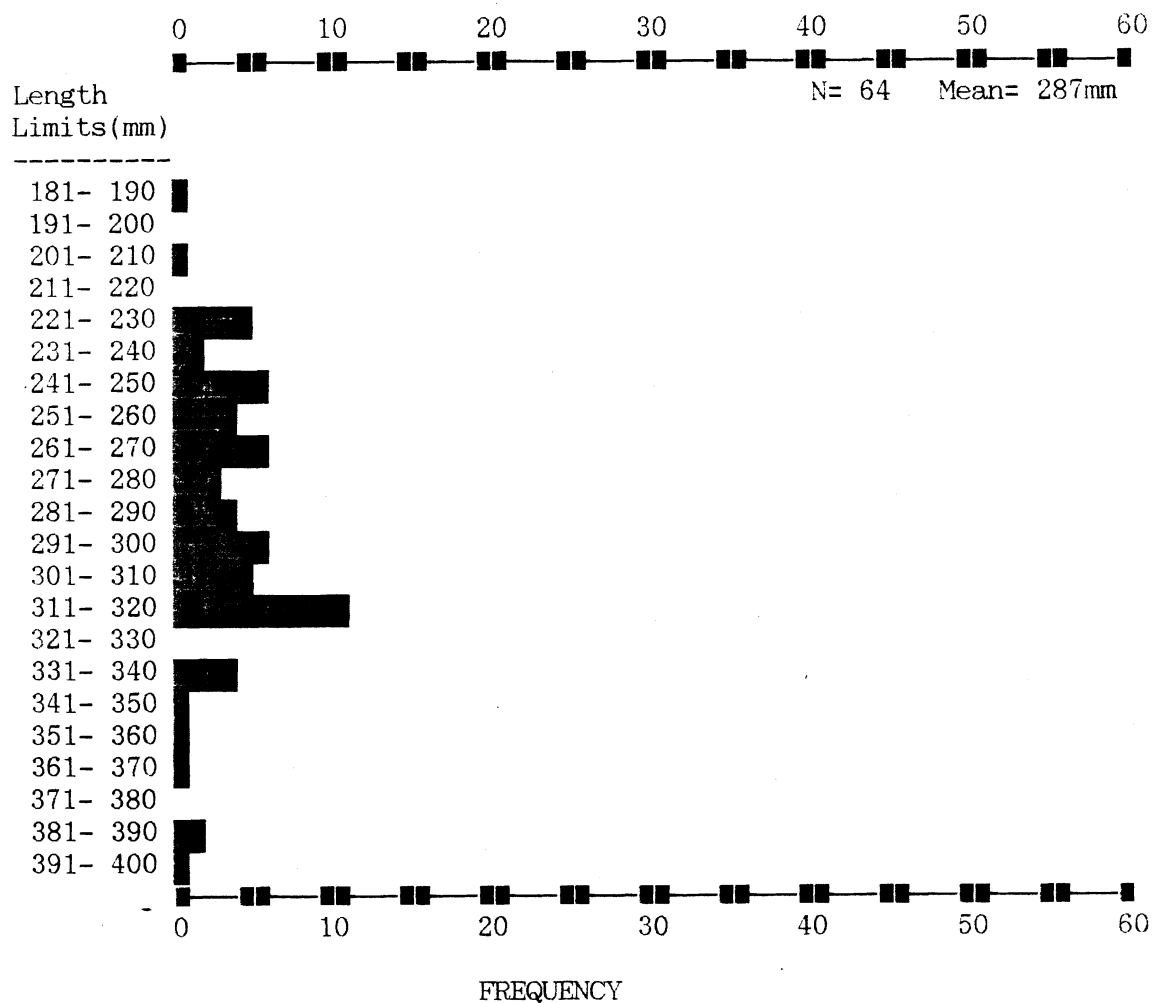


Figure 25. Length-Frequency Histogram for Gopher Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 2, 1986.

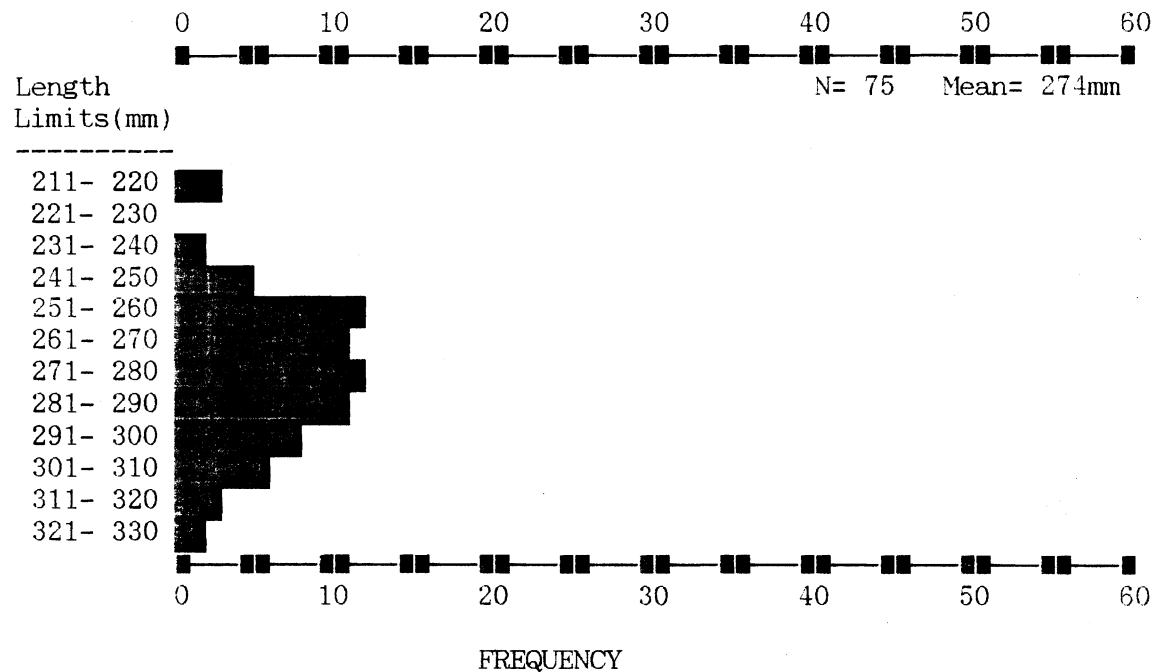


Figure 26. Length-Frequency Histogram for Bocaccio
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 2, 1986.

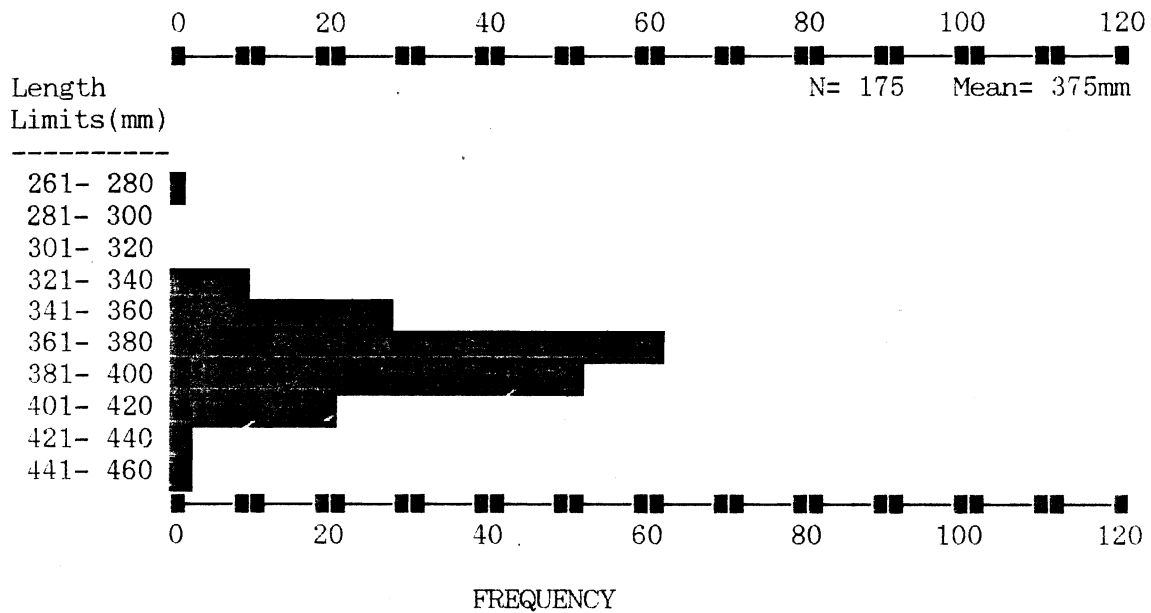


Figure 27. Length-Frequency Histogram for Chilipepper
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 2, 1986.

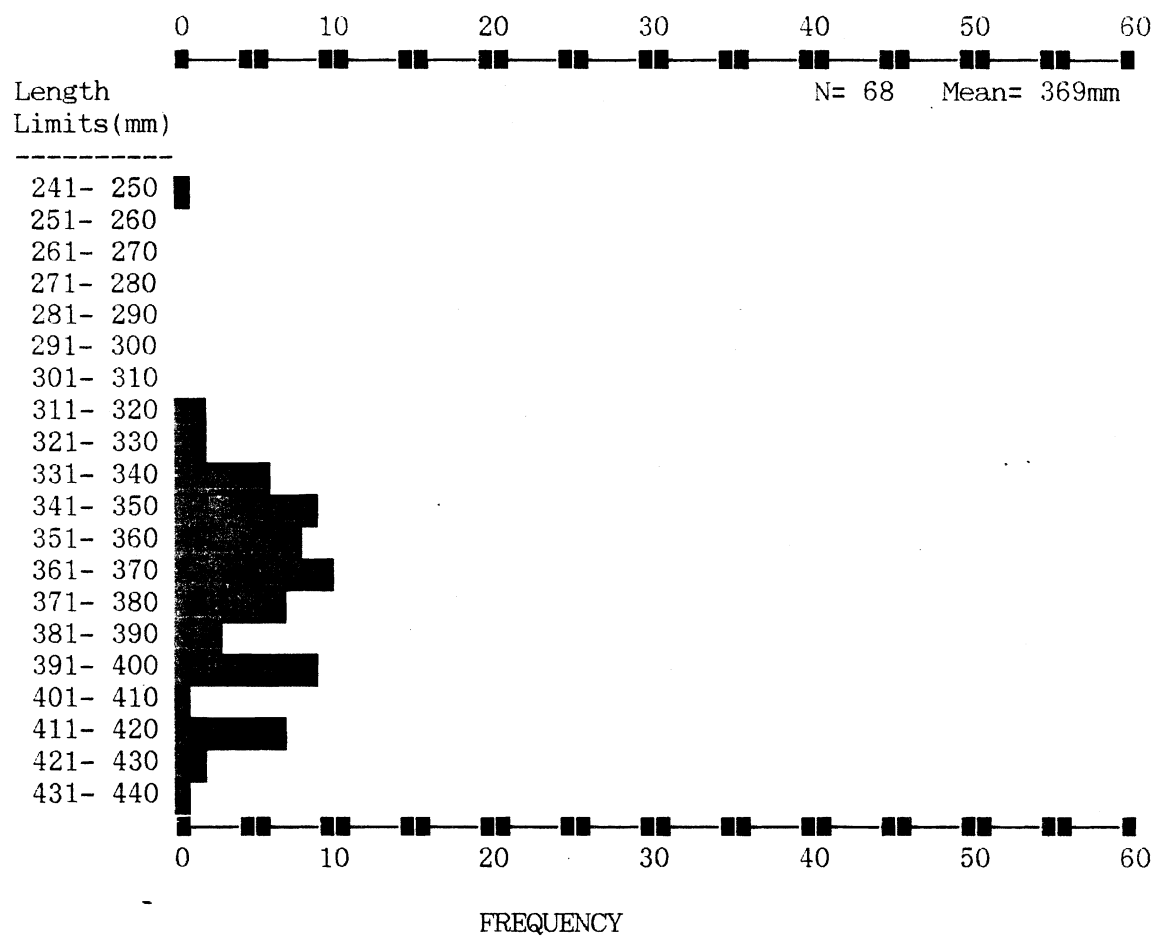
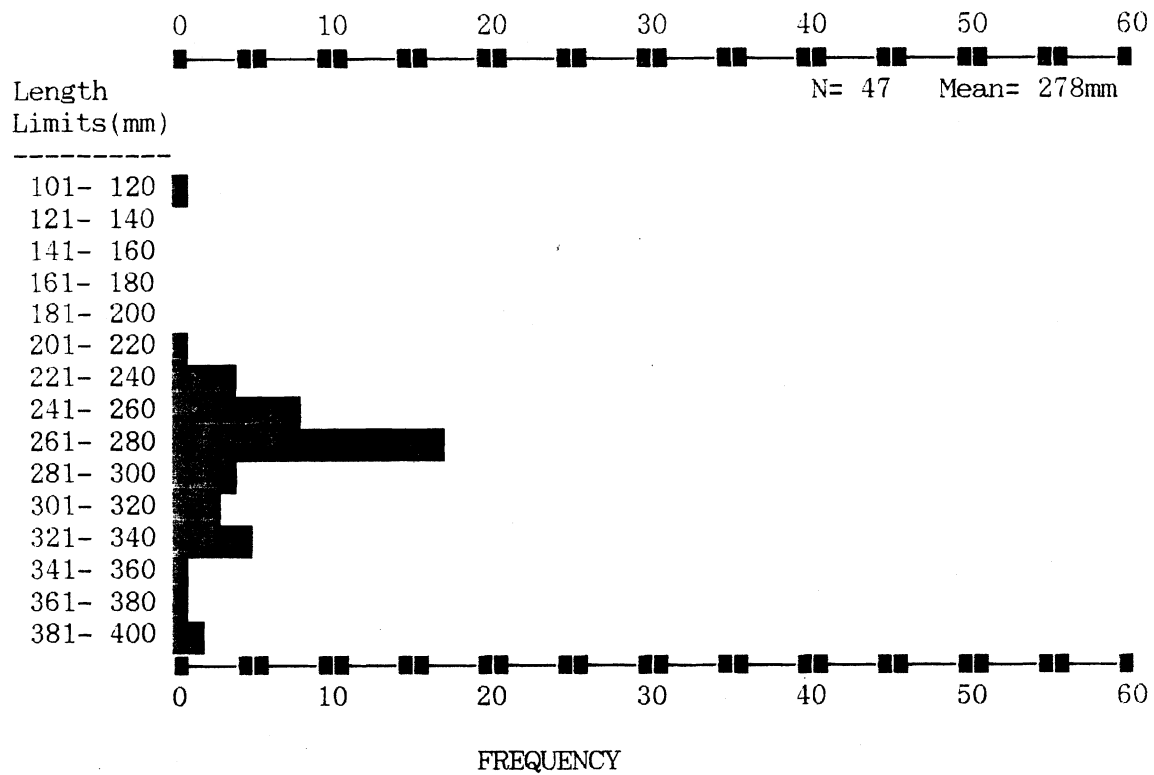


Figure 28. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 2, 1986.



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APPENDIX A

Pages 143 to 320 are on the attached microfiche on inside of back cover.

Appendix B. List of Common Names, Scientific Names, and Length-Weight Parameters from All Areas in 1986 for Quarter 2, Taken by All Mode Anglers Using All Types of Gear.

Common Name	Scientific Name	a	b
Jack Mackerel	<u>Trachurus symmetricus</u>	0.00000331000	3.22320
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>	0.00003220500	2.90840
Perch, Pile	<u>Rhacochilus vacca</u>	0.00000925500	3.09900
Greenlings (general)	<u>Hexagrammidae</u>	0.00002604300	2.89280
Seaperch, White	<u>Phanerodon furcatus</u>	0.00001366000	2.97800
Wolf-eel	<u>Anarrhichthys ocellatus</u>	0.00000502500	3.09100
Flounder, Starry	<u>Platichthys stellatus</u>	0.00000163000	3.34000
Rockfish, Rougheye	<u>Sebastes aleutianus</u>		
Rockfish, Kelp	<u>Sebastes atrovirens</u>	0.00003277410	2.86200
Rockfish, Brown	<u>Sebastes auriculatus</u>	0.00002601290	2.93360
Rockfish, Gopher	<u>Sebastes carnatus</u>	0.00002047310	2.95730
Rockfish, Copper	<u>Sebastes caurinus</u>	0.00001648140	3.01800
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>	0.00002047310	2.95730
Rockfish, Black-and-yellow	<u>Sebastes chrysomelas</u>	0.00000446010	3.25650
Rockfish, Starry	<u>Sebastes constellatus</u>	0.00000531230	3.19500
Rockfish, Splitnose	<u>Sebastes diploproa</u>	0.00000283950	3.24380
Rockfish, Greenstriped	<u>Sebastes elongatus</u>	0.00000475820	3.15310
Rockfish, Widow	<u>Sebastes entomelas</u>	0.00000291200	3.25430
Rockfish, Yellowtail	<u>Sebastes flavidus</u>	0.00001130400	3.04020
Chilipepper	<u>Sebastes goodei</u>	0.00000283950	3.24380
Rockfish, Rosethorn	<u>Sebastes helvomaculatus</u>	0.00001678550	2.99430
Rockfish, Squarespot	<u>Sebastes hopkinsi</u>	0.00000324000	3.25050
Rockfish, Shortbelly	<u>Sebastes jordani</u>	0.00000388300	3.16000
Rockfish, Quillback	<u>Sebastes maliger</u>	0.00003000000	2.93000
Rockfish, Black	<u>Sebastes melanops</u>	0.00001965710	2.95480
Rockfish, Vermilion	<u>Sebastes miniatus</u>	0.00002677000	2.91650
Rockfish, Blue	<u>Sebastes mystinus</u>	0.00001624670	2.98849
Rockfish, China	<u>Sebastes nebulosus</u>	0.00000564040	3.20470
Rockfish, Speckled	<u>Sebastes ovalis</u>	0.00000324000	3.25050
Bocaccio	<u>Sebastes paucispinis</u>	0.00000583320	3.09410
Rockfish, Canary	<u>Sebastes pinniger</u>	0.00001051000	3.05560
Rockfish, Grass	<u>Sebastes rastrelliger</u>	0.00000575900	3.23500
Rockfish, Rosy	<u>Sebastes rosaceus</u>	0.00001678900	2.99430
Rockfish, Greenblotched	<u>Sebastes rosenblatti</u>	0.00002047310	2.95700
Rockfish, Yelloweye	<u>Sebastes ruberrimus</u>	0.00001304370	3.05710
Rockfish, Flag	<u>Sebastes rubrivinctus</u>	0.00002346750	2.94310
Rockfish, Stripetail	<u>Sebastes saxicola</u>	0.00000706700	3.12010
Rockfish, Olive	<u>Sebastes serranoides</u>	0.00000521020	3.15410
Treefish	<u>Sebastes serripes</u>	0.01240400000	1.89000
Rockfishes (general)	<u>Sebastes spp.</u>	0.00000521020	3.15410
Thornyhead, Shortspine	<u>Sebastolobus alascanus</u>	0.00001406040	3.06300
Prickleback, Monkeyface	<u>Cebidichthys violaceus</u>	0.00000000000	0.00000
Perch, Black	<u>Embiotoca jacksoni</u>	0.00029100000	2.49640
Seaperch, Striped	<u>Embiotoca lateralis</u>	0.00001540000	3.01000
Salmon, Pink	<u>Oncorhynchus gorbuscha</u>		
Salmon, Coho (Silver)	<u>Oncorhynchus kisutch</u>	0.00000944000	3.00000
Salmon	<u>Oncorhynchus spp.</u>	0.00000944000	3.00000
Salmon, Chinook (King)	<u>Oncorhynchus tshawytscha</u>	0.00000944000	3.00000

APPENDIX B (continued)

Common Name	Scientific Name	a	b
Silversides	Atherinidae		
Sole, Sand	<u>Psettichthys melanostictus</u>	0.00000277100	3.26480
Anchovy, Northern	<u>Engraulis mordax</u>	0.00000560100	2.98400
Topsmelt	<u>Atherinops affinis</u>	0.00005566000	2.59000
Jacksmelt	<u>Atherinopsis californiensis</u>	0.00000098820	3.35360
Flounders, Lefteye	Bothidae		
Lingcod	<u>Ophiodon elongatus</u>	0.00001157000	2.99000
Shark, Leopard	<u>Triakis semifasciata</u>	0.00002089000	2.88000
Skates	Rajidae		
Codfishes	Gadidae		
Unidentified Fishes	Unidentified Pisces		
Eagle Rays	Myliobatidae		
Shark, Blue	<u>Prionace glauca</u>	0.00000082655	3.20000
Surfperches	Embiotocidae	0.00000000000	0.00000
Sturgeon, Green	<u>Acipenser medirostris</u>	0.00000053086	3.34800
Sturgeon, White	<u>Acipenser transmontanus</u>	0.00000053086	3.34800
Smelt, Night	<u>Spirinchus starksi</u>	0.00000086900	3.38600
Skate, Starry	<u>Raja stellulata</u>		
Ray, Bat	<u>Myliobatis californica</u>	0.00001054400	3.09289
Perch, Shiner	<u>Cymatogaster aggregata</u>	0.00000473500	3.21000
Trouts	Salmonidae		
Sharks	Chondrichthyes		
Guitarfishes	Rhinobatidae		
Sharks, Sand Tigers	Odontaspidae		
Croaker, White	<u>Genyonemus lineatus</u>	0.00000708500	3.08328
Fringehead, Sarcastic	<u>Neoclinus blanchardi</u>		
Mackerel, Pacific (Chub)	<u>Scomber japonicus</u>	0.00000136600	3.39360
Sculpin, Buffalo	<u>Enophrys bison</u>	0.00001790000	2.89600
Sablefish	<u>Anoplopoma fimbria</u>	0.00002248980	2.84080
Cabezon	<u>Scorpaenichthys marmoratus</u>	0.00008823220	2.72030
Sturgeons (general)	Acipenseridae	0.00000053086	3.34800
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>	0.00000035580	3.71700
Surfperch, Silver	<u>Hyperprosopon ellipticum</u>	0.00000469894	3.22700
Surfperch, Barred	<u>Amphistichus argenteus</u>	0.00001070000	3.10250
Surfperch, Calico	<u>Amphistichus koelzi</u>	0.00000469894	3.22700
Surfperch, Redtail	<u>Amphistichus rhodoterus</u>	0.00000469894	3.22700
Sole, Rock	<u>Lepidopsetta bilineata</u>	0.00000760300	3.09570
Smelt, Surf	<u>Hypomesus pretiosus</u>	0.00000086900	3.38600
Sole, Petrale	<u>Eopsetta jordani</u>	0.00000305800	3.23950
Seaperch, Rainbow	<u>Hypsurus caryi</u>	0.00001535000	3.00700
Sculpin, Pacific Staghorn	<u>Leptocottus armatus</u>	0.00001790000	2.89600
Seabass, White	<u>Atractoscion nobilis</u>	0.00001549000	2.92167
Bass, Kelp	<u>Paralabrax clathratus</u>	0.00000271598	3.27000
Sand bass, Spotted	<u>Paralabrax maculatofasciatus</u>	0.00001828600	2.96730
Sand bass, Barred	<u>Paralabrax nebulifer</u>	0.00000684400	3.11289
Halibut, California	<u>Paralichthys californicus</u>	0.00000849000	3.03300
Midshipman, Plainfin	<u>Porichthys notatus</u>	0.00000254000	3.25000
Queenfish	<u>Seriphus politus</u>	0.00001549000	2.92200
Hake, Pacific	<u>Merluccius productus</u>	0.00000633000	3.03000
Bass, Striped	<u>Morone saxatilis</u>	0.00001068210	2.90671

APPENDIX B (continued)

Common Name	Scientific Name	a	b
Sole, English	<u>Parophrys vetulus</u>	0.00009460000	2.58900
Smoothhound, Brown	<u>Mustelus henlei</u>	0.00002089000	2.88000
Sanddab, Pacific	<u>Citharichthys sordidus</u>	0.00000142860	3.37080
Sandabs	<u>Citharichthys</u> spp.	0.00000266000	3.29530
Sculpins	Cottidae		
Shark, Sevengill	<u>Notorynchus maculatus</u>	0.00000070600	3.49000
Bottomfishes (Groundfishes)	Bottom Pisces (Groundfishes)		
Spiny Dogfish	<u>Squalus acanthias</u>	0.00000189000	3.09000
Whitefish, Ocean	<u>Caulolatilus princeps</u>	0.00000304000	3.22000
Herring, Pacific	<u>Clupea harengus pallasii</u>	0.00002519100	2.84900
Greenling, Kelp	<u>Hexagrammos decagrammus</u>	0.00002604300	2.89280
Greenling, Rock	<u>Hexagrammos lagocephalus</u>	0.00002604300	2.89280
Stingrays	Dasyatidae		